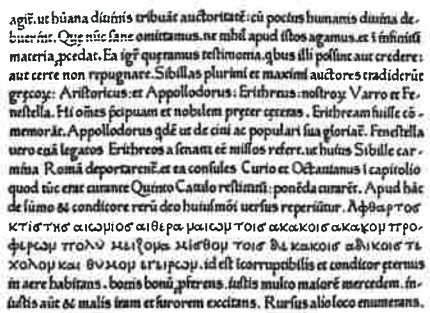
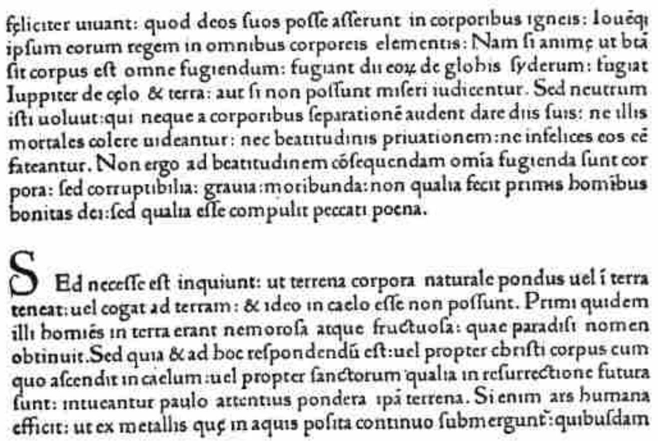
IN THE LATTER HALF of the 15th century Chancery script was favored by the scribes of the Vatican. It was an expression of the aesthetic philosophy of the Italian Renaissance. In 1455 Conrad Sweynheim and Arnold Pannartz produced a type that demonstrated the first move toward the "White Letter," the lighter, fuller "roman" letterform.

Nicholas Jenson

Five years later, in Venice, two brothers, Johannes and Wendelin da Spira, cut a type that was closer in style to a roman letterform—a 14-point type recognized as an advance on the type designs of Sweynheim and Pannartz. However, it was another newcomer to Italy, Nicholas Jenson (1420–1480), a Frenchman who settled in Venice in 1468, who was responsible for cutting the first outstanding version of the roman typeface. Cut in 1470, Jenson's Roman had only 23 letters, since "J," "U," and "W" were not yet in use. He



Above: Sweynheim and Pannartz working in Subiaco, Italy, in about 1465, cut a typeface for an edition of *Cicero* that was a lighter, fuller form than that of Textura, the formal script of northern Germany.

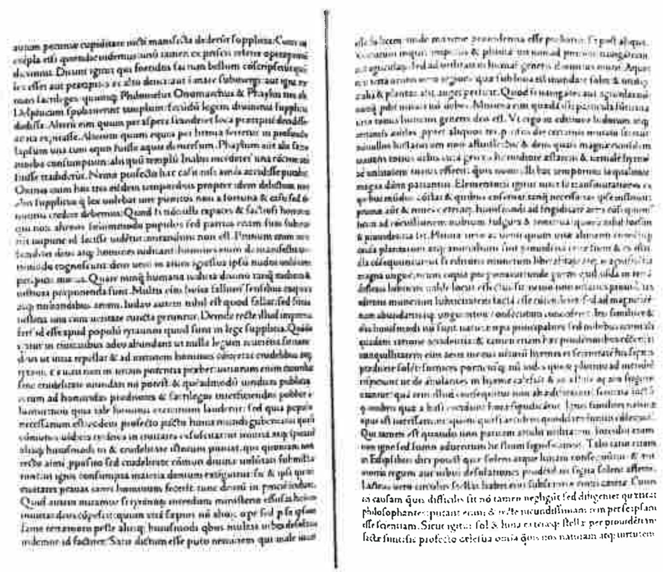


fęliciter uiuant: quod deos suos posse asserunt in corporibus igneis: Iouēq; ipsum eorum regem in omnibus corporeis elementis: Nam si animę ut bēā sit corpus est omne fugiendum: fugiant dii eorũ de globis syderum: fugiat Iuppiter de cęlo & terra: aut si non possunt miseri iudicentur. Sed neutrum isti uoluut: qui neque a corporibus separationē audent dare diis suis: ne illis mortales colere uideantur: nec beatitudinis priuationem: ne infelices eos eē fateantur. Non ergo ad beatitudinem cōsequendam omīa fugienda sunt corpora: sed corruptibilia: grauia: moribunda: non qualia fecit primis hominibus bonitas dei: sed qualia esse compulit peccati poena.

SEd necesse est inquiunt: ut terrena corpora naturale pondus uel ī terra teneat: uel cogat ad terram: & ideo in caelo esse non possunt. Primi quidem illi homiēs in terra erant nemorosa atque fructuosa: quae paradisi nomen obtinuit. Sed quia & ad hoc respondendū est: uel propter christi corpus cum quo ascendit in caelum: uel propter sanctorum qualia in resurrectione futura sunt: intueantur paulo attentius pondera ipā terrena. Si enim ars humana efficit: ut ex metallis quę in aquis posita continuo submergunt: quibusdam

26. *John and Wendelin de Spire's Roman Type, Venice,* 1469
From De Civitate Dei of 1470

Left: In Venice, the brothers Johannes and Wendelin da Spira cut a type that was strongly influenced by the humanist hand, itself a rejection of the Gothic form of northern Europe.



Left: The first Roman type. In 1469, Nicholas Jenson, a Frenchman working in Venice, cut what is considered to be the first true expression of the Latin letterform. This appeared in an edition of Eusebius's *De Evangelica Praeparatione*, and it set a standard by which others would be judged.

used the typeface for an edition of Eusebius's *De Evangelica Praeparatione*. The lowercase alphabet is the same, except that the "v" is used in place of "u," and, in addition, there is a long "s" and "æ" and "œ:" 15 contractions, six double letters, and three full points: 73 punches in all.

FROM A CRAFT TO AN ART

Nicholas Jenson had served an apprenticeship at the Paris Mint, and was promoted to Master of the Mint at Tours. Charles VII sent Jenson to Mainz to learn about the new invention of printing from movable type. He may have met Gutenberg. However, he arrived in Venice and proceeded to set up a printing workshop to print in his own right. At the time of his death in 1480 he had produced about 150 editions.

In 1476, when Jenson produced a volume of Pliny's *Natural History*, he required financial support from the Venetian bankers Strozzi and Agostini. As a result, payments are recorded of 731 ducats for 86 bales of paper. Each copy was sold for seven ducats. Jenson's type has become renowned for the comfortable fit of the letters as words and the beautiful proportions of the letterforms themselves. The Victorian designer William Morris (1834–1896) was to use Jenson's type as a model for his own Golden Type. The 20th-century typographer Bruce Rogers had a sustained interest in Jenson's roman which culminated in his typeface Centaur, released by Monotype in 1929, and discussed later in this book. In 1996 Robert Slimbach of Adobe designed an excellent digital version of Jenson's roman that is lighter in color than the heavy period quality of Morris's design. Jenson is admired above all other Venetian printers and typecutters of the 15th century because he is considered to have raised type design from a craft to an art form in its own right.

SOME 15 YEARS after Nicholas Jenson's death, another high-quality roman typeface was created in Venice that was to inspire type design for the next century and a half. This was the result of Aldus Manutius's remarkable qualities as a publisher, and the superb skills of his punchcutter, Francesco Griffo of Bologna.

Aldus Manutius

Teobaldo Manuzio, now better known by his Latinized name, Aldus Manutius, studied Greek and Latin in Rome. He developed a love of Greek, believing (in common with many other scholars) that a thorough knowledge of Greek literature was the way to a greater appreciation of the culture and knowledge of antiquity. He was a teacher until, in his forties, he decided that he should attempt the printing and publishing of classical Greek literature in the original language.

When Manutius arrived in Venice in 1489 the market for Latin books was well provided for, but for Greek books there was less demand, since most of Greek literature could already be found in Latin translation. Manutius made contact with writers and scholars. His research rewarded him with suitable manuscripts to convert into printed books. Venice had had a resident Greek community since the fall of Constantinople in 1453, and members of this community were able to help with the editing and publishing of the texts. Lastly, Manutius needed printers and financial backing. His first book in Venice was a Latin grammar printed by Andrea Torresani in 1493.

Left: Venice in the late 15th century was a hive of printing activity. The academic printer Manutius was also a businessman, and was aware that his books should be clearly identified by his device, which showed a dolphin and anchor.

EARLY TEXTS

Using the engraving skills of Francesco Griffo (d.1518), it was Manutius's primary intention to produce a satisfactory Greek typeface for his publications. Typographically speaking, ancient Greek had not gone through the process of revision and development in the same way that Latin had. This made it a complex project for type designers.

For their Greek typeface, Manutius and Griffo chose to adapt the calligraphic hand used in Venice at the time, rather than a more formal manuscript hand. Griffo's type influenced subsequent Greek types for many years, although it never received the same acclaim as his roman typefaces. In 1495 the first volume from the Aldine Press, an introduction to Greek grammar, appeared with parallel Latin translation.

Towards the end of the century Manutius turned to Latin editions as well as Greek, since his Greek publications never reached the level of popularity that he had hoped. In 1495, Griffo cut the type used for a Latin text, *De Aetna*, by Pietro Bembo. This was to become the typeface that made the names of Manutius and Griffo part of printing history.

ITALIC TYPE

Manutius added a series of pocket books to his list of publications. This was not a totally original idea, since small books had been produced before. However, for his small-format editions Manutius commissioned Griffo to cut a typeface based on the humanist script that was current—a similar concept to the Greek types he had already cut. Consisting of lowercase only (roman was used for the capital letters), this typeface is what we now call italic. The fact that it was more condensed than a roman face made it more economical in terms of space and thereby reduced the number of pages—an important consideration for cost and weight. These compact volumes of Latin literature were not intended for academics, but for general readers to carry with them to be read when time allowed. They proved to be extremely successful: the first volume, published in 1501, was an edition of *Virgil* which ran to two editions of 3,000 each.


P·V·M·MANTVANI BV
COLICORVM
TITYRVS.

Melibœus. Tityrus.

Tityre tu patulæ recubãs sub tegmine fagi Me.
Syluestrem tenui musam meditaris auena.
Nos patriæ fines, et dulcia linquimus arua,
Nos patriam fugimus, tu Tityre lentus in umbra
Formosam resonare doces Amaryllida syluas.
O Melibœe, deus nobis hæc otia fecit. Ti.
Namq; erit ille mihi semper deus: illius aram
Sæpe tener nostris ab ouilibus imbuet agnus.
Ille meas errare boues, ut cernis, et ipsum
Ludere, quæ uellem, calamo permisit agresti.
Non equidem inuideo, miror magis: undiq; totis Me.
Vsq; adeo turbatur agris: en ipse capellas
Protinus æger ago: hanc etiam uix Tityre duco.
Hic inter densas corylos modo namq; gemellos,
Spem gregis, ah silice in nuda conixa reliquit.
Sæpe malum hoc nobis, si mens non læua fuisset,
De cœlo tactas memini prædicere quercus.
Sæpe sinistra caua prædixit ab ilice cornix.
Sed tamen, iste deus qui sit, da Tityre nobis.
Vrbem, quam dicunt Romam, Melibœe putaui Ti.
Stultus ego huic nostræ similem, quo sæpe solemus

Above: In 1501, Manutius produced the first of his octavo classics, Virgil's *Opera*, which was set entirely in italic type. In this book he praises his typecutter Francesco Griffo.

In the 1600s, the majuscule (uppercase) and miniscule (lowercase) alphabets were viewed as independent components of a roman typeface. The uppercase of a Renaissance italic is often smaller than the uppercase of a roman font of equivalent size, and are, in fact, small caps. During this time, the roman and italic lowercases were kept entirely separate; entire books would be set in roman or italic but never mixed both. Consequently, authors of modern Old-style revivals have had to artificially match these independent designs.

Manutius guarded his publications and types jealously and claimed copyright and monopolies from the College of Venice. This resulted in a dispute with Francesco Griffo as to the true authorship of the Aldine set of types. Griffo claimed that he had not been given enough credit for his part in their creation and was restrained legally from cutting further types in the same style, reducing his ability to trade.

DURING THE 16TH CENTURY, French printing gained prominence over that of Italy. The middle years of the century have been called the Golden Age of French book arts.

Claude Garamond

Some of the important printers of this period were Simon de Colines, Jean de Tournes, Robert Estienne (son of Henri, the father of the dynasty of printer/publishers), and Geoffroy Tory, whose skills and learning were rewarded by promotion to become the first Imprimeur de Roi, the king's printer. This was a period when the printer still took responsibility for deciding what to print, so that printer/publishers were well-educated in the classics of Greek and Latin literature as well as in their native language.

Garamond had been apprenticed to Antoine Augereau, a Protestant printer/scholar who, like Geoffroy Tory, had been instrumental in promoting the use of the humanist Aldine roman types rather than the Gothic blackletter, which still maintained favor with some French printers.

In Paris, Garamond worked for several printers at first, but was taken up by his contemporary Robert Estienne, when Estienne commissioned a set of punches from the ambitious young punch-cutter. Eventually, in 1526, Robert took over the running of the press from his stepfather and became the royal printer of Hebrew, Latin, and Greek.

Garamond took the opportunity to become independent, and established himself as the leading French typecutter. The new roman that Garamond cut was used in Estienne's edition of *Pharaphrasis in Elegantiarium* by Erasmus, which appeared, together with several other publications in the series, in 1530.

A HARMONIOUS SET

There is little doubt that Garamond gained inspiration from Francesco Griffo for his own designs. However, Garamond introduced refinements to the Old-face which he maintained and modified over the years.

The italics that Griffo had cut for Manutius were only lowercase letters. Garamond took up the idea to cut a companion italic alphabet, with italic capitals that would partner roman fonts, a concept that is now a basic feature of all text faces. The combination and balance of capitals with a lowercase and italic alphabet provided the printer with a comprehensive and harmonious set of letterforms for the first time.

The success of Garamond's types results from their technical brilliance as well as from the quality of the design. His ambition to set up independently and make full use of his skills and connections helped to establish the cutting and casting of type as a specialized skill separate from printing.

After the death of Claude Garamond in 1561, his punches and matrices were sold. The biggest collection was purchased by Christopher Plantin, the French printer/publisher based in Antwerp.

Left: A 16th-century title page showing Garamond's types in use, including small capitals and italics with swash capitals, surrounded by an elaborate border composed of columns and foliage.

K

K

Above: The uppercase letters of Garamond (top) show greater contrast of stroke thickness compared Bembo (above). Note the subtle swelling of the rising arm of the "K," as it meets the serif. Garamond's Roman has a lighter color on the page. The serifs, while larger, have smaller bracketing than the more austere Aldine Roman.

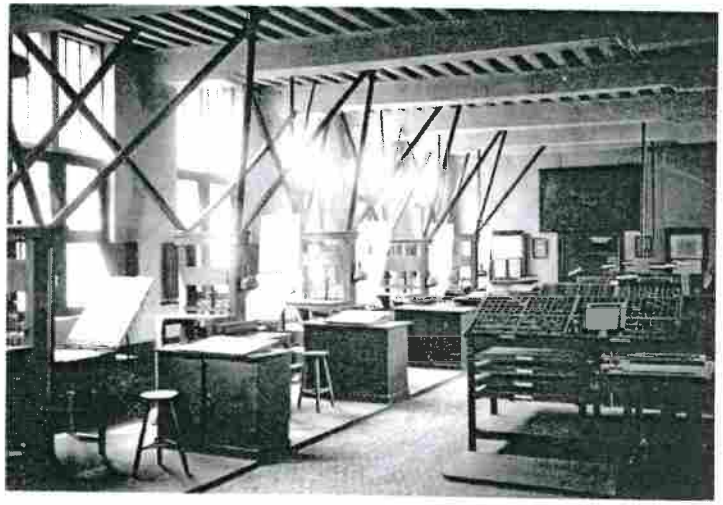
AFTER THE DEATH of Claude Garamond, a large quantity of his punches and matrices were purchased by printer and publisher Christopher Plantin. Plantin was also French, born near Tours in 1520. He had trained and worked as a bookbinder, spending a number of years in Paris and traveling around France.

Christopher Plantin

Plantin settled in Antwerp, which was at the time under the rule of the Spanish Habsburgs. After an injury that affected his ability to work as a bookbinder, he turned to printing and publishing in 1555. He quickly gathered around him a group of scholars, linguists, and theologians, and proceeded to publish a wide range of scholarly volumes. Although produced in the Netherlands, Plantin's publications were still effectively French. Not only had he been trained in France, but from the start he acquired much of his equipment, materials, and types from France.

Plantin is said to have had as many as 21 presses operating in his workshop when at full capacity, with a team of men to each press, each man carrying out his allotted function: one inking the type, one feeding paper in, one operating the lever to pull the impression, one removing the printed sheet.

Apart from his collection of the acclaimed Garamond types, Plantin was successful enough in his publishing enterprise to be able to commission types from other typefounders, in particular Robert Granjon of Lyon, who was also resident in Antwerp for a period. Granjon provided several of Plantin's civilité types (a cursive type based on the hand of the period, which could be described as a kind of French italic) and the Greek and Syriac for Plantin's master work, the *Polyglot Bible*. The *Polyglot Bible* was a massive eight-volume production, including texts in Hebrew, Greek, Latin, Chaldaic, and Syriac, produced between 1569 and 1572 under the patronage of King Philip II of Spain.

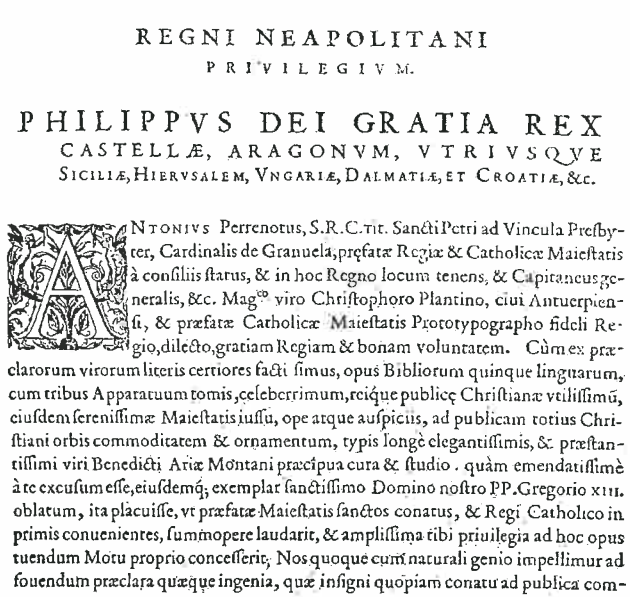


Left: A general view of part of the Plantin-Moretus Museum of Printing in Antwerp, once the press room of the Plantin publishing house. The heavy wooden presses on the left are fitted with struts from the ceiling. These steadied the presses as the continuous pulling action of the pressmen meant they were likely to move.

The typecutter Hendrik van den Keere started working for Plantin in 1568 and from 1570 was responsible for the typefoundry work and 40 sets of punches and matrices, which are still with the Plantin-Moretus Museum in Antwerp to this day.

DUTCH RISE TO PROMINENCE

After Plantin's death in 1589, his son-in-law Johannes Moretus continued to run the business, and was succeeded by his son Balathasar.



REGNI NEAPOLITANI
PRIVILEGIVM.

PHILIPPVS DEI GRATIA REX
CASTELLÆ, ARAGONVM, VTRIVSQVE
SICILIÆ, HIERVSALEM, VNGARIÆ, DALMATIÆ, ET CROATIÆ, &c.

ANTONIVS Perrenotus, S.R.C.tit. Sancti Petri ad Vincula Presbyter, Cardinalis de Granuela, præfatæ Regiæ & Catholicæ Maiestatis à consiliis status, & in hoc Regno locum tenens, & Capitaneus generalis, &c. Mag^co viro Christophoro Plantino, ciui Antuerpiensi, & præfatæ Catholicæ Maiestatis Prototypographo fideli Regio, dilecto, gratiam Regiam & bonam voluntatem. Cùm ex præclarorum virorum literis certiores facti simus, opus Bibliorum quinque linguarum, cum tribus Apparatuum tomis, celeberrimum, reique publicæ Christianæ vtilissimũ, eiusdem serenissimæ Maiestatis iussu, ope atque auspiciis, ad publicam totius Christiani orbis commoditatem & ornamentum, typis longè elegantissimis, & præstantissimi viri Benedicti Ariæ Montani præcipua cura & studio . quàm emendatissimè à te excusum esse, eiusdemq; exemplar sanctissimo Domino nostro PP. Gregorio XIII. oblatum, ita placuisse, vt præfatæ Maiestatis sanctos conatus, & Regi Catholico in primis conuenientes, summopere laudarit, & ampliſſima tibi priuilegia ad hoc opus tuendum Motu proprio concesserit; Nos quoque cum naturali genio impellimur ad fouendum præclara quæque ingenia, quæ insigni quopiam conatu ad publica com-

Left: A page from Plantin's mammoth work, the *Polyglot Bible*, an eight-volume edition containing texts in Hebrew, Greek, Latin, and Chaldaic. Completed in the late 1560s and early 1570s.

The prominence of French printing gave way to the Netherlands largely through the efforts of the Plantin-Moretus dynasty and later, in the 17th century, the Elzevir dynasty. There was also a demand in continental Europe and Britain for the work of a number of remarkable Netherlands typecutters: van den Keere, Christoffel van Dyck, and Dirck Voskens.

The Plantin typeface issued by Monotype in 1913, although named after the printer, was based on a Robert Granjon type used by Plantin's successors. This was found in use in Frankfurt, Germany, and Basle, Switzerland, at the end of the 16th century.

Plantin is a stocky face compared with most Old-faces, with a large x-height. The current digital range of Plantin includes a light as well as roman. There is also semibold as well as bold, all with accompanying italics, plus a single bold condensed.

WILLIAM CASLON (1692–1766) was the father of British typography and his work is the typographic embodiment of the English Baroque.

William Caslon

In 1586, the Archbishop of Canterbury and the Bishop of London were empowered by the Privy Council to control the number of printing presses in Oxford, Cambridge, and London; printing was not allowed elsewhere in England. The restrictions on the number of printing presses and therefore the size of the industry had a damaging effect: the quality of printed work declined, and English printers became dependent on types imported from the Netherlands, either as metal type or as matrices to be cast locally. These restrictions were lifted during the mid-17th century, although censorship remained in place. In the 1670s, however, when Dr John Fell and his committee set about improving print quality at Oxford University, it was still necessary for him to buy a collection of types and punches from Holland for the university's press to use. Due to these restrictions it was natural that William Caslon chose the Dutch Old-face as his model when cutting his first English Old-face types.

CRAFTSMAN AND INNOVATOR

Caslon has been called the greatest British typecutter and founder. The establishment of his type-foundry was a landmark in English printing because, with the quality of his types, he was able (almost single-handedly) to eliminate the need for imported Dutch types.

Above: Caslon Foundry specimen sheet. Caslon was the first internationally known British typefounder. The Caslon Foundry's type specimen sheet (above) did not appear until some ten years after he established his typefoundry.

Born in 1692, Caslon started his working life as an engraver. He set himself up in business engraving hunting guns and cutting punches for bookbinders' tooling. His fine work brought him to the attention of the printers John Watts and William Bowyer, who were impressed with the quality of Caslon's skills—so much so that they offered Caslon financial support to set up a typefoundry. In the same year of 1720, as a result of Caslon's growing reputation, the Society for the Promotion of Christian Knowledge used Caslon in a Psalter in 1725 and a New Testament in 1727, for its overseas mission. At the foot of Caslon's proofs for this font, he added his name cut in a pica roman. Bowyer was so impressed by these few letters that he encouraged Caslon to cut a complete roman font in that style. As a result, Caslon produced a roman and italic font, as well as one of Hebrew that was used by Bowyer for a folio edition, published in 1726.

Caslon cut several other faces required by his patron, Bowyer, including Coptic and other exotic types. It was possibly due to the intensity of his workload that he did not issue a specimen sheet of his types until 1734, 14 years after opening the typefoundry for business.

His designs soon achieved acceptance by many of the major printing houses, including King George's printer, who used his types to the exclusion of others. Caslon's reputation also spread abroad, but his English types marked the end of the historical Old-face. On the European continent the turn of the century had brought about changes in type aesthetics, and by the mid-century in Birmingham, England, John Baskerville was exploring new forms.

Caslon died at 74 in 1766, and the business was continued by his son, William Caslon II. Also an excellent craftsman he maintained his father's standards, expanding the company further. The Caslon Foundry continued until 1937, when it became part of the Sheffield Foundry, Stephenson, Blake, & Company, which was to become Britain's last metal typefoundry.

Right: In laying the foundations of modern science, Newton (1643–1727) was a major influence during the enlightenment and beyond. He defined gravity, and discovered that white light is composed of the color spectrum. The form of his *Philosophiae Naturalis Principia Mathemathica* (1687), is typical of the publications to appear throughout the enlightenment.

PHILOSOPHIÆ
NATURALIS
PRINCIPIA
MATHEMATICA.

AUCTORE
ISAACO NEWTONO, Eq. Aur.

Editio tertia aucta & emendata.

LONDINI:
Apud Guil. & Joh. Innys, Regiæ Societatis typographos.
MDCCXXVI.

abcdefghijklnopqrst
ABCDEFGHIJKLM
abcdefghijklmnopqrst

3

Caslon's first roman rapidly became a success when it appeared in the 1720s. This was largely because it was the first opportunity British printers had to use an unrivaled British typeface instead of those imported from Holland. It is a typeface that has a uniquely friendly individuality, with many quirks and inconsistencies, making it remarkably readable; it has endeared itself to generations of English-speaking printers, publishers, and readers. Indeed, the leading English dramatist George Bernard Shaw insisted that all his books were printed in Caslon. In its stocky geometry, freehand curves, and modest baseline serifs, it maintains the practical qualities that made the Dutch types so popular. The lower-case at the x-height have wedge-shaped serifs on "i," "j," "m," "n," and "r," but not on the "u," which has a lighter serif, square to the x-height. The distinct contrast of thick and hairline strokes can seem uneven when examined on individual letters, but strangely, when set in words, this works well.

Caslon became established in the 18th century and spread over the English-speaking world as part of the instruments of colonial rule. When it was first printed in 1776 by John Dunlap, the American Declaration of Independence was typeset in a Caslon type exported to the United States. Caslon's popularity faded for a while at the end of the 18th century because of competition from a new style of face, the transitional, led by Baskerville and Fournier. But in the mid-19th century there was a revival of interest in the Oldface, and it appeared again in the specimen books in 1857. Almost simultaneously, there was a revival in the United States when it was issued by the Philadelphia Foundry of L. J. Johnston.

20TH-CENTURY CASLON

The popularity of Caslon Old-face is evident from the number of versions available throughout the 20th century. The original Caslon was available from Stephenson, Blake, & Company for hand-setting as recently as 2001. There were two hot metal Caslons: Monotype cut a version in 1915 and Linotype cut one in 1921. The ATF Caslon 540 (1905) was an adaption of the Johnston Caslon.

DIGITAL CASLON

There are at least nine digital versions of Caslon available. Most supply a full range of sizes, but Adobe Caslon, designed by Carol Twombly in 1990 and consisting of 20 variants including swash capitals with the italics, is suitable only for text

uvwxyz&1234567890
NOPQRSTUVWXYZ
uvwxyz&1234567890

Above: The 1905 ATF version, Caslon 540, derived from the Johnston adaption. It includes probably the most iconic character in typographic history, the Caslon italic ampersand.

setting, since the design has modified Caslon's original characteristics by reducing the contrasts and increasing the weight of the serifs. It functions well in smaller sizes, but the loss of the unique Caslon character is very noticeable in display sizes. Matthew Carter's Big Caslon is a crisp, geometrically refined design that expresses the contrasting stroke thickness of Caslon with elegance, designed specifically for display work. ITC Caslon, digitized by Justin Howes, released in 1998 consists of four versions of Caslon, that closely follows Caslon's original metal designs. This is a range for the Caslon connoisseur and is an attempt at following the founder's traditional practice of making modifications to letterforms by way of optical corrections to suit a particular size. Founders 12 is for text based on a pica Caslon, and has noticeably uneven edges and more irregularities than the larger display sizes. Founders 30 is based on two-line English Caslon and 42 on a two-line double pica Caslon. Following 18th-century conventions, there are no bolds, and figures are Old-style (like lowercase, they align with the x-height); there are italics and small capitals. ITC also has a Caslon range designed in 1982 by Edward Benguiat. Caslon Classico, designed by Franko Luin in 1993 and available from Linotype, is a modest range of roman and bold, italics, and roman small capitals. Berthold offer two ranges of Caslon: Caslon 471 in regular, and italics, and Caslon Book in regular, medium, and bold with expert fonts.

Caslon's types were a great achievement but the last of a line of Old-faces. These three lowercase letters set in Adobe Caslon show the heavier, triangular serif on the "w" and "r" not applied to the "u."

THE TRANSITION

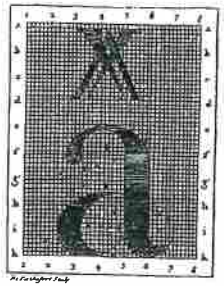
WILLIAM CASLON'S TYPEFACES met with success in Britain, but they were based on the types of the 16th century. As Caslon's typefoundry expanded, almost simultaneously there was a development in France that moved type design into a new age; this was the first of the transitional typefaces.

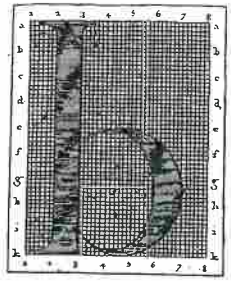
In 1692, Louis XIV of France commissioned a new collection of types to be created for the exclusive use of the *Imprimerie Royale* under the leadership of Jacques Jaugeon.

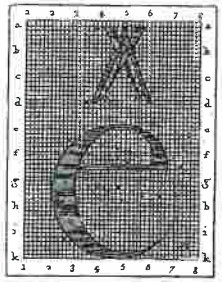
The formation of a committee to consider the requirements of a typeface was a break with the traditions of past centuries. These were the early years of the new scientific age, and the committee studied a considerable quantity of writing on letterforms and type from previous generations, including those of Albrect Dürer and Geofroy Tory, as well as contemporary writing masters. The results of their deliberations were drawn using a grid of 2,304 small squares, to determine the proportions of each letter. A series of copper plates engraved with the final letters was executed between 1695 and 1718 as the committee's work proceeded slowly. The calligraphic flow, or the forms echoing the movement of the broad pen, was no longer evident: these forms were determined by mathematics rather than craft.

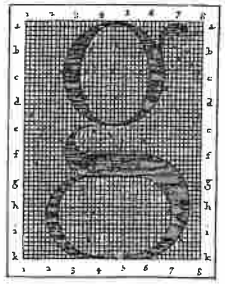
The first cutting of the punches was entrusted to Philippe Grandjean de Fouchy, a typecutter with a growing reputation, and his assistant Jean Alexandre. Grandjean and Jaugeon seem to have had disagreements from time to time during this period, because Grandjean was not altogether convinced by the mathematical certainty of the forms as presented on the copper plates. This point of friction and other revisions resulted in punches being destroyed and others remade.

Among the issues tackled by the committee was the rationalizing of type body sizes. A system was devised to standardize a unit of type measurement based on the *pied du roi*, the unit of linear measurement at the time. This system made it possible to establish collections of types with interrelated body sizes—an important rationalization for letterpress printing, which was not fully implemented in France until 1775.









Right: *Romain du Roi* (King's Roman), consisted of 21 sizes of roman and italics, and 21 roman and italic initial letters—a total of 84 fonts. The serif brackets are less prominent than on Old-face types. Ascenders are designed with serifs on both sides at the head of the stem, adding horizontal emphasis. The contrast between thick and thin strokes is more pronounced compared to the types of Garamond and his school, and the overall appearance is of a lighter weight than Old-face.

Far right: The King's Roman Grandjean's types for the French King Louis XIV, were first used in 1702, although the complete range was not finished until 1745.

AUTRE MEDAILLE

SUR LA NAISSANCE DU ROY.

COMME les Romains ont eû soin de frapper des Médailles, pour perpétuer dans tous les siecles le souvenir de la constellation, sous laquelle l'Empereur Auguste estoit né ; on a voulu de mesme, sans rien donner aux chimeres de l'Astrologie, transmettre à la postérité la mémoire de la position, où se trouvoit le Ciel dans le moment que Dieu donna à la France le Prince, qui la rend la plus florissante Monarchie du monde.

C'est le sujet de cette Médaille. On a placé tout au tour les douze Signes, & les sept Planetes, dans la mesme position, où ils estoient au moment de cette heureuse naissance ; & suivant l'idée de la Devise du Roy, dont le Soleil est le corps, on a représenté au milieu la naissance de ce Prince, par la figure du Soleil, qui se leve. Le Roy enfant est assis sur un Char élevé au dessus des nuës, & tiré par quatre chevaux. Le Char est mené par la Victoire, qui d'une main luy montre une Couronne de laurier, symbole des avantages, qu'il doit remporter sur les Ennemis de la France ; & qui de l'autre main tient les guides de ses Chevaux, comme pour l'asseurer qu'elle le conduira dans toutes ses entrepriſes. Les mots de la Légende, ORTUS SOLIS GALLICI, signifient, *le lever du Soleil de la France*. Ceux de l'Exergue, SEPTEMBRIS QUINTO, MINUTIS TRIGINTA OCTO ANTE MERIDIEM. M. DC. XXXVIII. veulent dire, *le Roy né le 5 de Septembre, trente-huit minutes avant midy 1638.*

THE NEW *ROMAIN DU ROI* had many admirers, among them the typefounder Pierre Simon Fournier. He later claimed that his business was the first in France to carry out every aspect of typefounding: designing, cutting punches, striking matrices, making molds, and casting type.

The point system

3

Unlike his contemporary Caslon, Fournier was born into a family of typefounders and printers. His father Jean-Claude had been the manager of the Paris typefoundry LeBé for almost 30 years. His older brother Jean-Pierre Fournier (1706–1783), known as "the elder," was a typecutter and founder who bought the LeBé in 1730. His second brother François was a printer in Auxerre, the birthplace of his father.

Pierre Simon Fournier had studied drawing as a child, which was most likely the beginning of his attraction to letterforms. At first he worked for his older brother at the typefoundry, and as he gained experience he was allowed to engrave punches for capital letters (large initial letters normally cut from wood). In 1736 Fournier set up in business in his own right. He quickly gained a reputation for his technical brilliance as a typecutter and founder, and for the technical innovations he introduced. As a type designer he was not an innovator; his ability lay in the adaption and developments he made to the ideas of others. This accounts for his appreciation of the *Romain du Roi* types, which he emulated despite the king's prohibition.

MEASUREMENT SYSTEM

In 1737, Fournier began to formulate a system of comparative type body sizes. The typeface body sizes of early typefounders were not standardized; founders cast their type on bodies of their own specification. Any given typeface was generally only cut in a limited number of sizes. Names were used to give an indication of size, some were derived from a historic publication in which the type of that size had first been used: for example, Cicero, the continental 12-point, is said to originate from Fust & Schoeffer's edition of Cicero's *De Oratore*, printed in a type close to 12 Didot points in about 1466. Other examples are Brevier, a size between 7.7- and 7.9-point, and Great Primer, a size between 16.6- and 16.9-point.

Fournier based his standard on two inches; each inch divided up into 12 lines and each line into six typographic points, making 144 typographic points overall. Therefore two *nonpareils* (a *nonpareil* being equivalent to six points) equals one Cicero. This offered a measurement system that was of great practical benefit, although it was not taken up by other foundries for another decade or so.

Fournier's most remarkable achievement, and the culmination of many years dedicated to the perfection of his art of typography, was his two-volume *Manuel Typographique*. The preface to the first volume, published in 1764, was set in his remarkable italics. The following pages contained example after example of types set in an elegant display of the typography of the period, many borrowed from his brother's typefoundry collection, including a number of large, simple initial letters not commonly available. Also displayed, with great elegance and refinement, were a large variety of typographic ornaments modified to the taste of the day. These were intended to replace the copperplate engravings used by many printers.

Fournier's two-volume set explained the mysteries of the practice and art of typefounding and was the most authoritative publication available at the time. Volume II appeared in 1766, two years before he died (from what some have described as overwork). In a span of 28 years he had cut over 80 fonts of type, as well as managing the daily work of the typefoundry.

Above: A heavenly typefoundry. This engraved frontispiece is from the second volume of Fournier's *Manule Typographique*, printed in 1766.

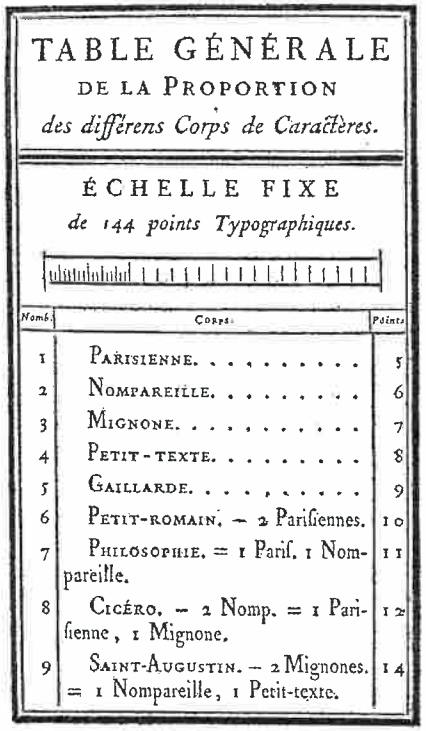


TABLE GÉNÉRALE
DE LA PROPORTION
des différens Corps de Caractères.

ÉCHELLE FIXE
de 144 points Typographiques.

Nomb.	Corps.	Points.
1	Parisienne.	5
2	Nompareille.	6
3	Mignone.	7
4	Petit-texte.	8
5	Gaillarde.	9
6	Petit-romain. = 2 Parisiennes.	10
7	Philosophie. = 1 Paris. 1 Nompareille.	11
8	Cicéro. = 2 Nomp. = 1 Parisienne, 1 Mignone.	12
9	Saint-Augustin. = 2 Mignones. = 1 Nompareille, 1 Petit-texte.	14

Above: Fournier spent many years devising a system of interrelated type sizes, which he put into practice in his own typefoundry. The chart explained his ideas.

DURING HIS LIFETIME John Baskerville was considered something of an eccentric, and in Britan his ideas on type design were not met with much enthusiasm initially. Some critics even suggested that his type was bad for the eyes. However, in continental Europe his innovations were received with greater appreciation.

John Baskerville

3

John Baskerville was born in Worcestershire, England in 1706 and moved to Birmingham at the age of 19, where he trained as a writing master and stone engraver. After some years, he was able to invest in the manufacture of "Japanned Goods," which utilized a method of varnishing furniture, screens, and smaller items such as tea trays and snuff boxes to achieve a hard, brilliant finish.

Baskerville found success in this very lucrative activity and after a number years achieved financial security, becoming a established figure in Birmingham. In 1750, his achievements allowed him to turn his attention to printing, and he set up a printing press at the age of 44.

Baskerville's typeface, cut by his employee John Handy, was completed after many false starts owing to Baskerville's perfectionism. The complete set of punches took approximately three years to complete. His first book, and edition of classic poetry by Virgil, appeared in 1757. In his striving for perfection Baskerville explored ways of improving the printing press, to make it capable of greater precision, more subtle impressions, and the printing of more delicate types. He also devised improvements in the quality of his printing ink. He had paper woven to his specification, he developed a method of further smoothing the paper, and he lent a brilliance to type by passing the printed sheets between heated copper plates. With this attention to detail Baskerville was able to produce books of great elegance.

BASKERVILLE'S LEGACY

Baskerville's perfectionism tended to hinder his financial success. Shortly before he died he tried to sell the printing press and his punches, without success. After he died, his widow maintained the business for a while, but eventually sold the complete Baskerville typefoundry to the French Pierre Augustin Caron de Beaumachais in 1779. Beaumachais was a playwright, secret agent, and visitor to the London house of John Wilkes (a friend of Baskerville). He was also a friend of Benjamin Franklin and supporter of American independence from the British king. He acquired the contents of the Baskerville typefoundry with the intention of printing the collected works of the French enlightenment philosopher, Voltaire, whose work was prohibited in France. Beaumachais was also the author of *The Barber of Seville* and *The Marriage of Figaro*, better known today as the 18th-century operas by Rossini and Mozart respectively. The surviving 2,750 punches from Baskerville's original collection was presented to Cambridge University Press in England, in 1953.

THE

PSALTER,

OR

PSALMS of DAVID,

Pointed as they are to be ſung or ſaid in Churches.

THE FIRST DAY.

MORNING PRAYER.

PSAL. I. *Beatus vir, qui non abiit.*

BLESSED is the man that hath not walked in the counſel of the ungodly, nor ſtood in the way of ſinners: and hath not ſat in the ſeat of the ſcornful;

2 But his delight is in the law of the Lord: and in his law will he exerciſe himſelf day and night.

3 And he ſhall be like a tree planted by the water-ſide: that will bring forth his fruit in due ſeaſon.

4 His leaf alſo ſhall not wither: and look, whatſoever he doeth, it ſhall proſper.

5 As for the ungodly, it is not ſo with them: but they are like the chaff which the wind ſcattereth away from the face of the earth.

6 Therefore the ungodly ſhall not be able to ſtand in the judgment: neither the ſinners in the congregation of the righteous.

7 But

THE

Holy Bible,

CONTAINING THE

OLD TESTAMENT

AND

THE NEW:

Tranſlated out of the

Original Tongues,

AND

With the former TRANSLATIONS

Diligently Compared and Reviſed,

By His MAJESTY's Special Command.

APPOINTED TO BE READ IN CHURCHES.

CAMBRIDGE,

Printed by *JOHN BASKERVILLE*, Printer to the UNIVERSITY.

M DCC LXIII.

CUM PRIVILEGIO

Above and above right: Baskerville achieved one of his dearest wishes in 1758: the opportunity to print bibles and prayer books for the Cambridge University Press.

Right: Baskerville's typography was influenced by a revival of interest in the classical. His page layout has a pure simplicity, with letter-spaced capitals and generous margins. Such simplicity needs great attention to the details of proportion.

P. VIRGILII MARONIS

AENEIDOS

LIBER SEXTUS.

Sic fatur lacrymans: claſſique immittit habenas,
Et tandem Euboïcis Cumarum allabitur oris.
Obvertunt pelago proras: tum dente tenaci
Ancora fundabat naves, et litora curvæ
Prætexunt puppes. Juvenum manus emicat ardens
Littus in Heſperium: quærit pars ſemina flammæ
Abſtruſa in venis ſilicis: pars denſa ferarum
Tecta rapit, ſilvas; inventique flumina monſtrat.
At pius Æneas arces, quibus altus Apollo
Præſidet, horrendæque procul ſecreta Sibyllæ (que
Antrum immane, petit: magnam cui mentem animoAdeſt.
Delius inſpirat vates, aperitque futura.
Jam ſubeunt Trojæ lucos, atque arta reſta.
Dædalus, ut fama eſt, fugiens Minoia regna,
Præpetibus pennis auſus ſe credere cœlo,
Inſuetum per iter gelidas enavit ad Arctos;
Chalcidicaque levis tandem ſuperaſtitit arce.
Redditus his primum terris, tibi, Phœbe, ſacravit
Remigium alarum, poſitoque insignia templo.
In foribus lethum Androgeo: tum pendere pœnas

Cecropidæ

P. VIRGILII ÆNEIDOS LIB. VI. 235

Cecropidæ juſſi (miſerum!) ſeptena quotannis
Corpora natorum. Stat ductis ſortibus urna.
Contra elata mari reſpondet Gnoſia tellus:
Hic crudelis amor tauri, ſuppoſitique furto
Paſiphae, miſtumque genus, prolemque biformem
Minotaurus ineſt, Veneris monumenta nefandæ.
Hic labor ille domus, et inextricabilis error.
Magnum Reginæ ſed enim miſeratus amorem
Dædalus, ipſe dolos tecti, ambagesque reſolvit,
Cæca regens filo veſtigia. tu quoque magnam
Partem opere in tanto, ſineres dolor, iere, haberes.
Bis conatus erat caſus effingere in auro:
Bis patriæ cecidere manus. quin protinus omnia
Perlegerent oculis; ni jam præſaga Achates
Adforet, atque una Phœbi Triviæque ſacerdos,
Deiphobe Glauci: fatur quæ talia Regi:
Non hæc ulla hic tibi tempora ſpectacula poſcit.
Nunc grege de intacto ſeptem mactare juvencos
Præſtiterit: totidem lectas de more bidentes.
Talibus affata Æneas (nec ſacra morantur
Juſſa viri) Teucros vocat alta in templa Sacerdos.
Exciſum Euboïcæ latus ingens rupis in antrum:
Quo lati ducunt aditus centum, oſtia centum:
Unde ruunt totidem voces, reſponſa Sibyllæ.
Jamque erat ad limen, quum Virgo, Poſcere fata
Tempus, ait: Deos, ecce, Deus. Cui talia fanti
Ante fores, ſubito non vultus, non color unus,
Non comtus manſuere comæ; ſed pectus anhelum,
Et rabie fera corda tument; majorque videri,
Nec mortale ſonans, afflata eſt numine quando
Jam propiore Dei. Ceſſas in vota precesque

G 5 2 Tros,

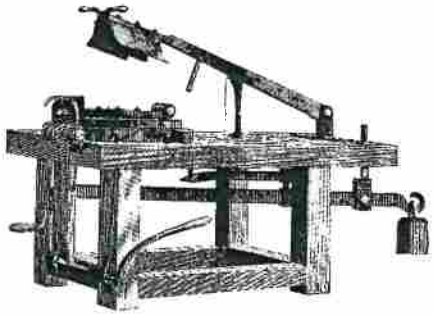
FRANÇOIS DIDOT (1689–1757), was the patriarch of a family of remarkable printers, publishers, typecutters, and papermakers, and with his sons, François Ambroise and Pierre, made significant contributions to the development of French printing.

The Didot dynasty

3

François Ambroise Didot (1730–1804) introduced France to the fine-surfaced paper favored by Baskerville. He was commissioned in 1783 by Louis XVI to produce an elegant collection of classical French authors. The types were cut by his former apprentice Pierre-Louis Vaflard to François Ambroise's specification, which expressed the classical mode.

François Ambroise established the Didot point system, the type body-sizing method that had first been contemplated by the *Académie des Sciences* in the 1690s and developed subsequently by Fournier. François Ambroise standardized the point at 72 points to the French inch, and with royal authority Didot's rationalization became the accepted standard in France by the end of the century. When the metric system was introduced by Napoleon in 1801, however, Didot tried to adapt his system, without success—another change so soon was unacceptable to printers and foundries. When the grandson of Benjamin Franklin, the American scientist and diplomat, wished to take up an apprenticeship in printing, it was François Ambroise that Franklin recommended he contact.



Left: The engraving shows the typecasting machine invented by Henri Didot, son of Pierre François Didot. It was taken over by his nephew Marcellin Legrand and patented in 1829. One of these machines was taken to London by the typefounder Louis Pouchée a few years later.

A FAMILY BUSINESS

François Ambroise's two sons, Pierre and Firmin, both continued the family business. Pierre took over the running of the printing office and Firmin distinguished himself as a typefounder. While still working for his father in 1784, he cut punches for a letterform that have since been claimed to be the first Modern type. His design reduced serifs and the thin strokes to fine lines, and increased the contrast of the thick strokes.

Firmin printed his work on smooth-surfaced, woven paper, which was made possible through improvements in the presswork. Firmin's father proudly used his son's typographic creations for a fine edition of the Renaissance poet Tasso's *Gerusalemme Liberta*.

Pierre's printing and publishing skills were admired greatly, so much so that his printing office was allocated premises in the Louvre. From this location, he produced a series of elegantly illustrated volumes of French and Latin classics known as *Editions du Louvre*. In 1818 he bought, from the Beaumarchais family, the sets of punches for 22 Baskerville types.

Firmin's two sons, Ambroise Firmin and his brother Hyacinthe, maintained the publishing side of the family firm as Firmin Didot Brothers into the 19th century. Pierre's son Henri was highly regarded for his cutting of microscopic types. His brother Saint-Léger, a paper manufacturer, was responsible for supporting the early developments of a papermaking machine, later perfected in England.

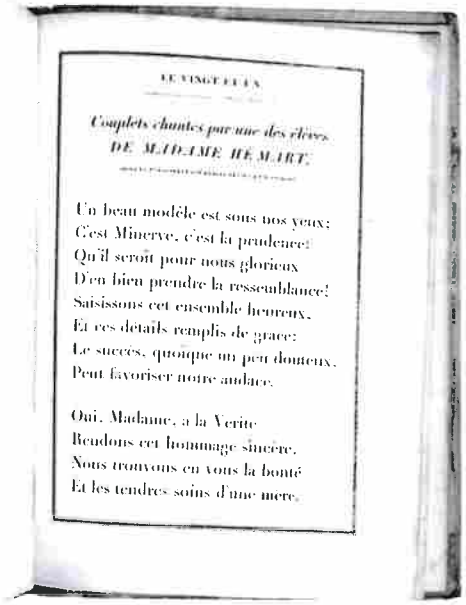
Firmin Didot gained great prominence for the quality of his types and they represented the cool elegance of the neoclassical age in France. He was also an inspiration to others, particularly the great genius of the Modern letterform, the Italian printer Giambattista Bodoni. Didot was made director of the typefoundry of the *Imprimerie Impériale* by Napoleon, and died in 1836 having received many honors.

QUINTI
HORATII FLACCI
CARMINUM
LIBER QUARTUS.

ODE I.
AD VENEREM.

Intermissa, Venus, diu
Rursus bella moves. Parce, precor, precor!
Non sum qualis eram bonæ
Sub regno Cinaræ. Desine, dulcium
Mater sæva Cupidinum,
Circa lustra decem flectere mollibus
Iam durum imperiis. Abi
Quo blandæ iuvenum te revocant preces.

167. *Page of folio Horace; Pierre Didot, Paris*, 1799 (*reduced*)



LE VINGT ET UN.

Couplets chantés par une des élèves
DE MAD.ME HÉMART.

Un beau modèle est sous nos yeux;
C'est Minerve, c'est la prudence!
Qu'il seroit pour nous glorieux
D'en bien prendre la ressemblance!
Saisissons cet ensemble heureux,
Et ces détails remplis de grace:
Le succès, quoique un peu douteux,
Peut favoriser notre audace.

Oui, Madame, à la Vérité
Rendons cet hommage sincère,
Nous trouvons en vous la bonté
Et les tendres soins d'une mère.

Left: A page from Pierre Didot's 1799 edition of Horace, the Roman poet. A fine example of the vertically stressed French Modern type style.

Above: A page from Didot's prospectus showing his version of the Modern Roman; this was to become the style of the 19th-century text face.

THE BRILLIANT PRINTER and punchcutter who, more than anyone, brought the Modern face to the height of elegance and sophistication was the Italian, Giambattista Bodoni. The typeface reached a peak of perfection in the late 18th century, although as a style it remained popular throughout the 19th century.

Giambattista Bodoni

3

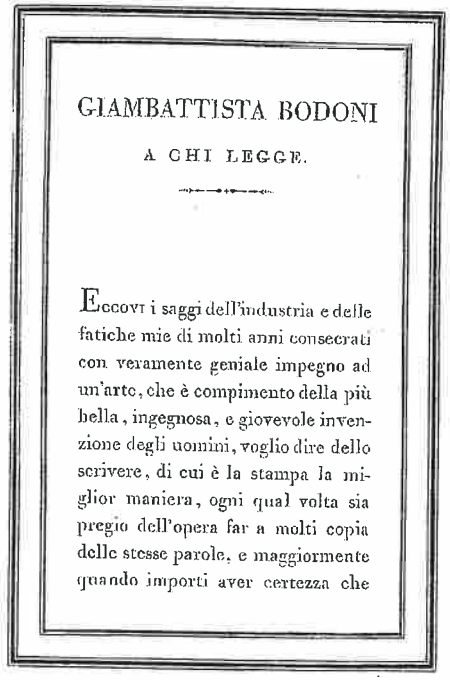
By the end of the 18th century Modern itself had come under attack, being described as an adulterated construct that was lacking the qualities for good legibility, and so began its fall from favor. However, the Modern letterform at the close of the 18th century was one created by the aesthetics and technical refinements of a new Classical age, far from the calligraphically-derived forms of the Renaissance.

Bodoni was born in Saluzzo, northern Italy, in 1740. He was the son of a printer, so he came into contact with printing at an early age, and soon picked up skill in the practice of engraving woodblocks. At the age of 18, he became a compositor in the Vatican Printing Office in Rome. He was ambitious and quick to learn, and having shown an interest in Oriental languages, he was put in charge of the Vatican Oriental typefaces. Many of these had been cut some two centuries earlier by such names as Garamond and Grandjean, and they now required organizing and cataloging, since they were in a bad state of neglect. It was this experience that broadened Bodoni's interest in letterforms, at times designing and cutting typographic ornaments for use in the department.

FROM CRAFTSMAN TO ARTIST

John Baskerville's reputation and printing achievements had reached Italy, and in 1768, at the age of 28, Bodoni decided that he should travel to England and meet Baskerville for himself. However, when preparing for his journey to Birmingham in Britain, he fell sick with malaria and was forced to spend time recovering at his family home in Saluzzo. It was while convalescing that he received a proposal from the Duke of Parma, who had learned of Bodoni from contacts at the Vatican.

The Duke was the patron of a library and academy of art in Parma, and he was planning to increase his prestige by setting up a printing office with the intention of printing fine books. He asked Bodoni to become the director, which Bodoni was keen to do. He started work at the Stamperia Reale, Parma, in 1768, and would spend the rest of his working life there. The first types he chose to print with were the transitional types of Pierre Simon Fournier. However, Bodoni was ambitious, and soon designed his own types that fully expressed his concept of elegance. These were demonstrated in his specimen book, prepared in 1771.

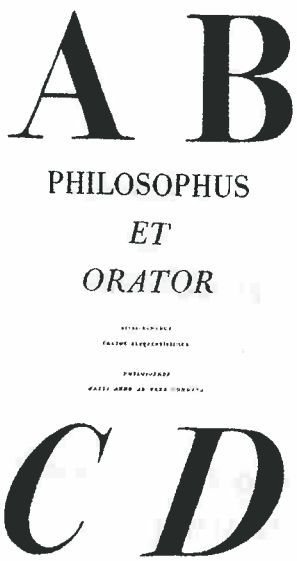


GIAMBATTISTA BODONI

A CHI LEGGE.

Eccovi i saggi dell'industria e delle fatiche mie di molti anni consecrati con veramente geniale impegno ad un'arte, che è compimento della più bella, ingegnosa, e giovevole invenzione degli uomini, voglio dire dello scrivere, di cui è la stampa la miglior maniera, ogni qual volta sia pregio dell'opera far a molti copia delle stesse parole, e maggiormente quando importi aver certezza che

fonderia: il Manuale presente ne renderà esatto conto, qualora vogliasi confrontare col primo. Converrammi piuttosto osservare, che il sesto e il contorno sono i medesimi ch'egli vivente diede ad alcune pagine fatte imprimere per prova. In queste, a differenza del suo primo Manuale, ove ogni pagina conteneva la descrizione di una qualche città, comincian-



A B

PHILOSOPHUS

ET

ORATOR

C D

Top left and left: The *Manuale Tipografico*, Bodoni's master work, which contained specimens of his enormous collection of types and his views on the art of type design, printed in 1788. The second volume was published posthumously by his wife in 1818, five years after his death.

Above: Another page from the the *Manuale Tipografico* showing the use of the largest and smallest of Bodoni's collection of roman and italic capitals.

BY THE EARLY 19TH CENTURY typefoundries had a new kind of client, demanding a new sort of typeface. The new client was the jobbing printer, and his demand was for "display" typefaces. The jobbing printer's role emerged from increasingly sophisticated commercial activity and its accompanying need for publicity materials.

Type gets bigger and bolder

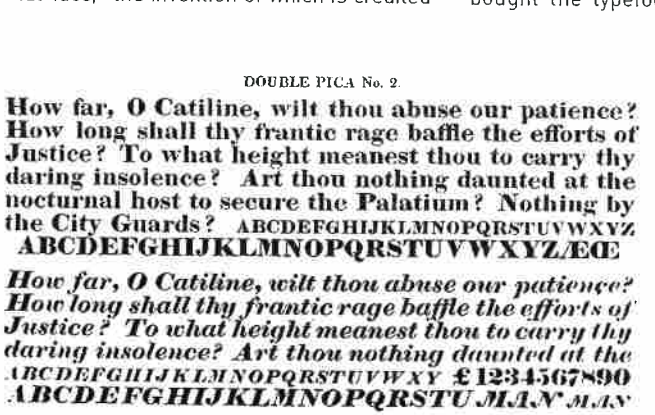
4

In towns and cities the advertising needs of all kinds of businesses, ranging from patent medicine vendors to auctioneers, were served by the local jobbing printer.

Large poster types were needed. The large decorated and engraved letters that were in existence in the 18th century, especially those of Pierre Simon Fournier, were only intended for the title pages of books. The manufacture of display types was an area of enterprise that gave British typefoundries an opportunity to develop their range of typefaces.

The first design to successfully fulfil the requirements of display type became known as the "fat-face," the invention of which is credited to Robert Thorne (1754–1820). Thorne's simple but ingenious concept was to make use of the vogue for the continental Modern face, such as Bodoni. By increasing the thickness of the stems to an enormous degree, while maintaining the thin strokes and the thin, unbracketed serifs, he produced a fierce blackletter of enormous power. It was extremely popular with advertisers, but filled many typographic commentators with horror. Nonetheless, the idea soon gained favor with other foundries and their customers.

Robert Thorne, one of the outstanding typefounders of the 19th century, had been apprentice to Thomas Cottrell. After Cottrell's death, Thorne bought the typefoundry and its collection of punches and matrices, and proceeded to expand the range of types on offer. His 1798 specimen book contained 45 pages of romans, italics, titlings, shaded letters, flowers, and one font of two-line script. Thorne's fat-face designs were greatly admired. Their reputation spread to the continent, with the result that he received an unprecedented request to cut a fat-face font for the *Imprimerie Royale* in Paris.


DOUBLE PICA No. 2.

How far, O Catiline, wilt thou abuse our patience? How long shall thy frantic rage baffle the efforts of Justice? To what height meanest thou to carry thy daring insolence? Art thou nothing daunted at the nocturnal host to secure the Palatium? Nothing by the City Guards? ABCDEFGHIJKLMNOPQRSTUVWXYZ

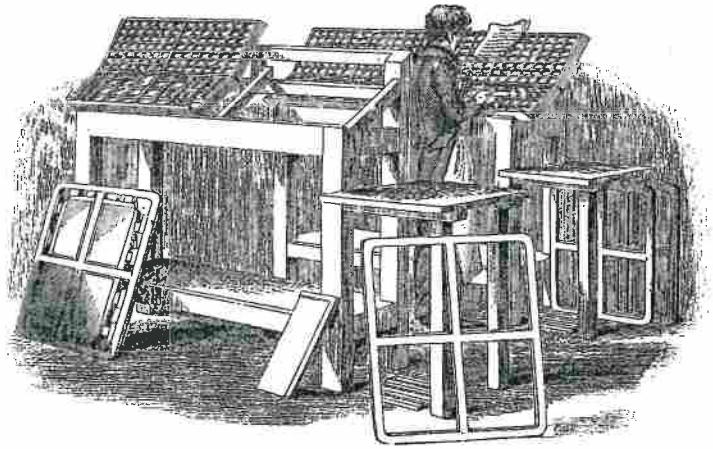
ABCDEFGHIJKLMNOPQRSTUVWXYZÆŒ

How far, O Catiline, wilt thou abuse our patience? How long shall thy frantic rage baffle the efforts of Justice? To what height meanest thou to carry thy daring insolence? Art thou nothing daunted at the

ABCDEFGHIJKLMNOPQRSTUVWXY £12345678900

ABCDEFGHIJKLMNOPQRSTU MAN MAN

Left: Robert Thorne's display faces of c.1820, based on the distortion of the Modern text face, created a large, powerful type for poster work. The size is the equivalent of present-day 24-point. Fat-face was his most influential face.



Left: A compositor, as the 19th-century typesetter was known, stands at a "frame," setting type from a typecase.


THE QUICK BROWN FOX JUMPS OVER the quick brown fox jumps over the lazy

THE QUICK BROWN FOX! the quick brown fox jumps

THE BOLD black dog

JUMPS at the

LAZY RED!

ABCDEFGHIJKLMNOPQRSTUVWXYZÆŒ abcdefghijklmnopqrstuvwxyzæœ& 12345678902 .,:;!?-'"'"([

Left: A typefoundry's specimen page for Playbill demonstrating the sizes available. This is a 20th-century revival of a 19th-century slab-serif Egyptian in which the serifs have the appearance of being heavier than the letterform itself.

Right: A typical 19th century theater poster, featuring letterforms, slab-serifs, and fat-faces vying for attention.


KATE HARLEY

MISS HERAUD

MR GEORGE

MR LINTON

ROWE BARRON

MR & MRS

AUBREY

THE NEW DISPLAY FACES were outsized types that were measured by "lines." A line was the equivalent of one pica (12-points). A common size, six-line for example, would be 72-points.

The first slab-serifs

4

Many display faces were only available as titlings—fonts of capital letters only, that were enlarged on the body, taking up the space normally allocated to the descenders, in order to achieve greater impact.

Just before his early death in 1820, Thorne had been in the process of cutting a slab-serif display type for which he coined the name "Egyptian." The name seemed appropriate since there were parallels drawn between the square black serifs and the relics of ancient Egyptian architecture. It was only a short time after Napoleon's fleet had been defeated in the Battle of the Nile in 1798, and there was a considerable amount of public interest in Egypt due to the Rosetta Stone and other antiquities.

It was, however, Thorne's competitor Vincent Figgins, who created the first slab-serif face in 1815. He named his face "Antique" and produced it in four sizes, all titlings. This was possibly Britain's first truly original contribution to the art of type design. Figgins, a prominent London typefounder, had been apprentice to Joseph Jackson, who himself had been apprentice to William Caslon I. Figgins had managed Jackson's typefoundry during the last years of the latter's life, although he did not manage to take it over after Jackson's death. He was forced to start up on his own, with encouragement from a John Nichols, to whom he later expressed his enormous gratitude. A very capable man, Figgins set up in Holborn, London, soon gaining a reputation as an outstanding, creative typecutter.

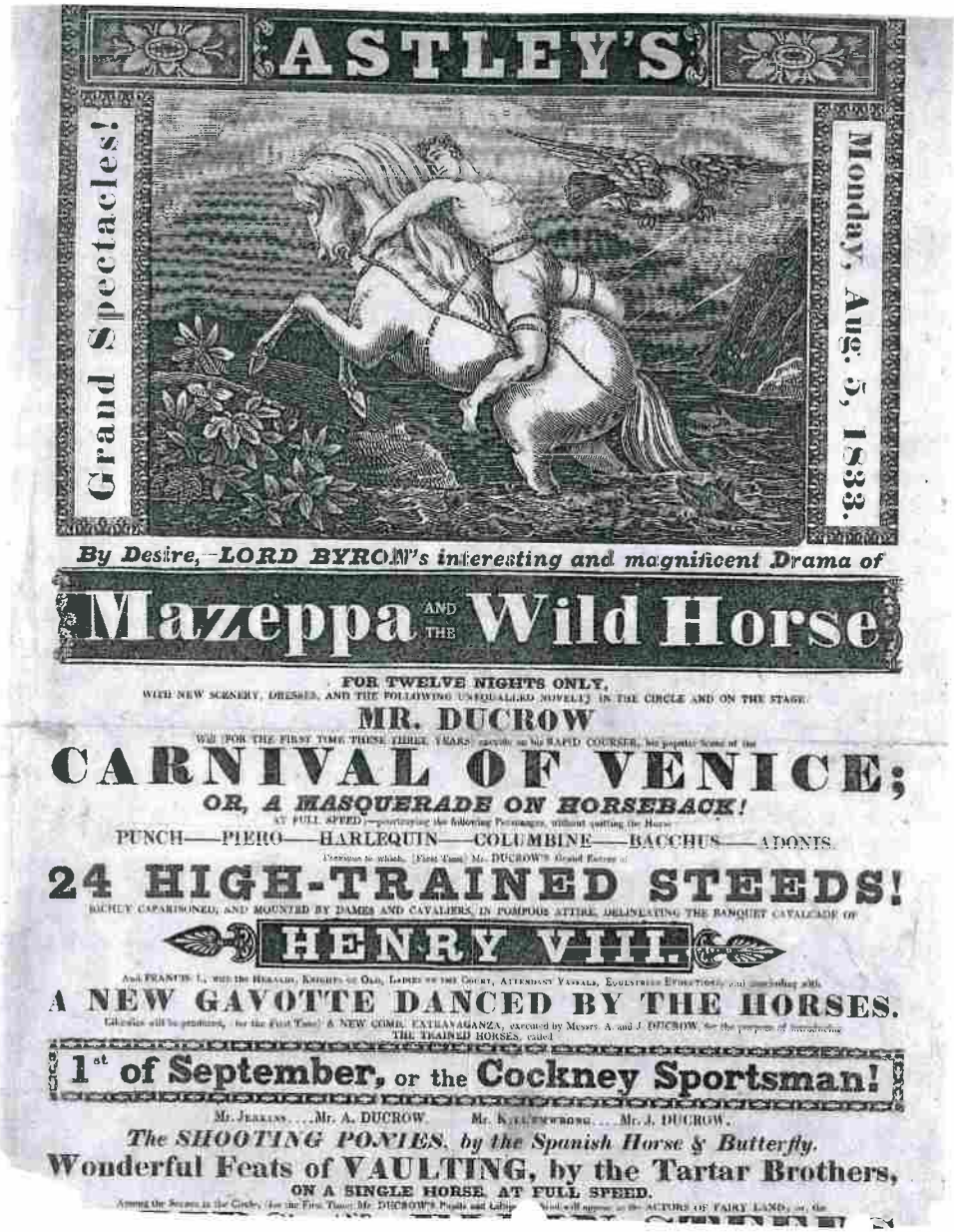
The Egyptian slab letterform was a great success, and was soon in use on the continent and in the United States. Over the coming years, the slab-serif was subjected to numerous variations that condensed it into narrow vertical forms or stretched it out to forms that were much wider than they were high.

Vincent Figgins

Antique

Left: Figgins' Egyptian slab-serif design had an extraordinary impact when it was introduced.

Opposite: Figgins' Antique was used extensively alongside Thorne's famed blackletter typeface, as in this poster.



TWO IMPORTANT FORMS survived the 19th century's exuberant typographic inventions that went on to be developed in the 20th century: the sans-serif and the resilient slab-serif. The popularity of slab-serifs faded in the latter part of the 19th century, largely due to developments of the typecutter's art, but they experienced a revival in the 1930s.

The new slab-serifs

4

These new slab-serif versions maintained the Egyptian theme. The first to appear was Memphis, from the Stempel Foundry of Frankfurt in 1929. Then came Karnak from Ludlow, and Beton from Bauer in 1931; Cairo from Intertype, and Pharaoh from Deberny & Peignot in 1933; Rock-well from Lanston Monotype in 1934; and Scarab from Stephenson, Blake, & Company in 1937.

The 20th-century slab-serifs were not the extremely assertive extroverts of the previous century. The new types were designed for a modernist aesthetic, and were refined, mono-lined forms with the same kind of geometric purity that was characterisitc of the sans-serifs of the same generation. The serifs are without brackets and have the same thickness as the body strokes, which are modified as the weight increases. These types were specifically de-signed to be used for text in publicity material, rather than books, but they are also capable of functioning as display fonts.

The slab-serif, like the sans-serif form, was not only a vigorous survivor of the hot-metal and photosetting periods, but now retains great popularity in the present digital age. The charac-teristics can be found in the metal typefoundry updates such as Berthold's Beton, Stempel's Memphis, Monotype's Rockwell, and Morris F. Benton's Stymie for ATF, but they can also be found in some new-generation digital fonts. The digitized slab-serif Beton of the Baur Foundry has five weights and no italics; an extremely deli-cate light, demi-bold, bold, extra bold, and bold condensed. There is an outline shadow version that has not been digitized as yet. Monotype's Rockwell family consisted of light, roman, bold, extra bold, condensed, and bold condensed, each with slanted roman rather than italics. The hot-metal family included a display titling outline shadow form and a shaded form cross-hatched with fine lines which seem to be a remnant of the 19th century. Stempel's Memphis digitized family provides light, medium, bold, and extra bold. The full hot-metal range included three weights of condensed, an outline version called Open, and Luna, a shadow version. Morris F. Benton's ATF Stymie consists of light, medium, bold, black, and two weights of condensed, medium, and bold. As yet there are no italics or slanted romans.

ABCDEFGH
abcdefghijk

Slab-serifs have now become more refined than the 19th-century Egyptians. Due to the aesthetics of the 1920s, faces like Rockwell, generally have a single-line thickness with more traditional serif proportions.

Rockwell

the quick brown fox jumps over the lazy dog

Memphis

the quick brown fox jumps over the lazy dog

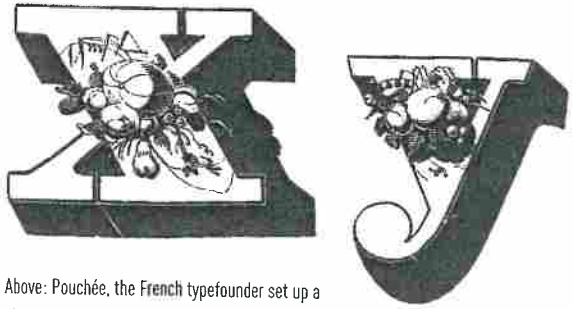
Futura

the quick brown fox jumps over the lazy dog

At first sight Rockwell and Memphis are the same face but Rockwell has a traditional two-storey "a" while Memphis has a single-storey "a," which is favored by the 1927 Futura. The terminal of the vertical stroke of the lowercase "t" also differs, while for Rockwell the dot on the "j" is round, for the Memphis "j" it is square.

ARG
ARG

The differences are more obvious when comparing Rockwell Regular capitals (top), with Memphis Medium capitals.



Above: Pouchée, the French typefounder set up a short-lived typefoundry in London to produce these elaborately decorated display types, produced with the aid of the casting machine invented by Henri Didot.

THE SLAB-SERIF emerged as a new form due to typefounders' search for fresh, eye-catching display letterforms. During the 19th century, as the founders' technical skills improved, more and more elaborate inventions of typographic novelty were created. Typefounders had answered the challenge that the jobbing printers set.

Clarendon

4

During the early years of the 19th century, the new typeforms were subject to considerable confusion regarding terminology. Foundries invented their own names until later in the century, when many of the more popular forms became part of the jobbing printer's stock of types.

In 1820 Robert Thorne's Fann Street Foundry was taken over by William Thorowgood, who bought it when it was put up for auction. He had no previous connection with typefounding, but threw himself into the business, determined to make a success of his new acquisition. It was said that he had bought the typefoundry with winnings from a state lottery. Thorowgood soon re-established Fann Street on the typographic map, so that by 1822 he had been appointed letterfounder to King George IV. Thorowgood enlarged his collection of punches and matrices, not only by creating his own designs, but also by acquiring the stock from Dr Edmund Fry's typefoundry when he retired. This notable collection included Greek, Hebrew, Russian, and German (blackletter) typefaces.

A MUCH NEEDED ADDITION

In 1845, Thorowgood registered a new type called Clarendon. It is actually Robert Besley who is credited with the origination of this letterform. Besley had worked at the Fann Street Foundry for some ten years and was made a partner in

TWO LINES ENGLISH CLARENDON

Quosque tandem abutere Catilina, patientia nostra? quamdiu nos etiam furor iste tuus eludet? quem ad finem sese effrenata jactabit audacia tua? nihilne te nocturnum præsidium palatii, nihil urbis vigiliæ, nihil timor

£1234567890

METROPOLITAN IMPROVEMENT.

Left: Clarendon was first produced by Thorowgood's Fann Street Foundry in 1845; Robert Besley, a foundry worker later to become a partner, is credited with the design.

12 point
To travel hopefully is a better thing than to arrive, and the true success is to labour.

14 point
By appointment to His Royal Highness

14 point display
A Penny Plain and Twopenny Coloured

16 point
An Englishman's house is his castle

18 point
Oliver Twist has asked for more

24 point
Repeal of the Corn Laws

30 point
George Stephenson

36 point
The Lost Chord

42 point
Savoy Operas

12 point
Hazlitt said, as we advance in life, we acquire a keener sense of the value of time.

14 point
I dreamt that I dwelt in marble halls

14 point display
The Charge of the Heavy Brigade

16 point
Stockton and Darlington Railway

18 point
The Walrus and the Carpenter

24 point
Victorian Music Halls

30 point
Idylls of the King

36 point
Arts & Crafts

42 point
St. Pancras

Left: This letterpress specimen sheet shows sizes from 12-point up to 48-point.

1838. This was a face that had its origins in the Egyptian slab-serif, but displayed far more refinement. It showed the thick and thin modeling of a roman, a slight narrowness, and finely bracketed, heavy serifs. It was a bold type cast in text sizes, for Clarendon was designed to emphasize type. The Modern roman was the text face in common use (though the color may have varied from one cutting to another) and was only produced as roman and italics. At this time text typefaces were not cast with a range of different weights, as now. The new typeface was intended to be used with a roman text face in order to emphasize words as required—for example, in dictionaries and similar listings, or to give more impact within the text of advertisements. The bracketing of the serifs was intended to blend the bolder face with the delicate Modern form.

Clarendon proved to be a much needed addition to the printer's range. This was the first typeface design to be registered under England's Designs Copyright Amendment Act. The act prevented the copying of the type for three years. However, because of the popularity of this design, the ban had little effect on the plagiarists; certainly after the three years the specimen books of most foundries carried a version of Clarendon. Among printers, the name "Clarendon" came to be used as a generic term to describe boldness.

Clarendon has maintained an almost unchanged presence in typefounders' specimen books and has not been much extended. In contemporary digitized versions, Hermann Eidenbenz's designs for the Linotype library has three weights, while the Clarendon carried by the Adobe library has a light, medium, bold, and two extra versions; extra bold, and extra bold expanded. Monotype's Clarendon also has three weights, plus a condensed bold. There is no italic form of Clarendon.

TECHNICAL DEVELOPMENTS

IN THE 19TH CENTURY there was a growing demand for printed material of all kinds—including reading material for entertainment and education, as well as commerce. There were developments in paper manufacturing, reproduction techniques, typefounding, and typesetting.

The Linotype machine, invented by Ottmar Mergenthaler, was demonstrated in New York in 1890. An operator sat at the keyboard and, by depressing the keys, assembled a line of matrices from a magazine above the keyboard. The line of matrices were then cast as one piece of metal, called a "slug," by the injection of molten metal. In 1885 the Monotype machine arrived, which like the Linotype machine, cast type as well as assembling it in lines, but as individual letters rather than slugs.

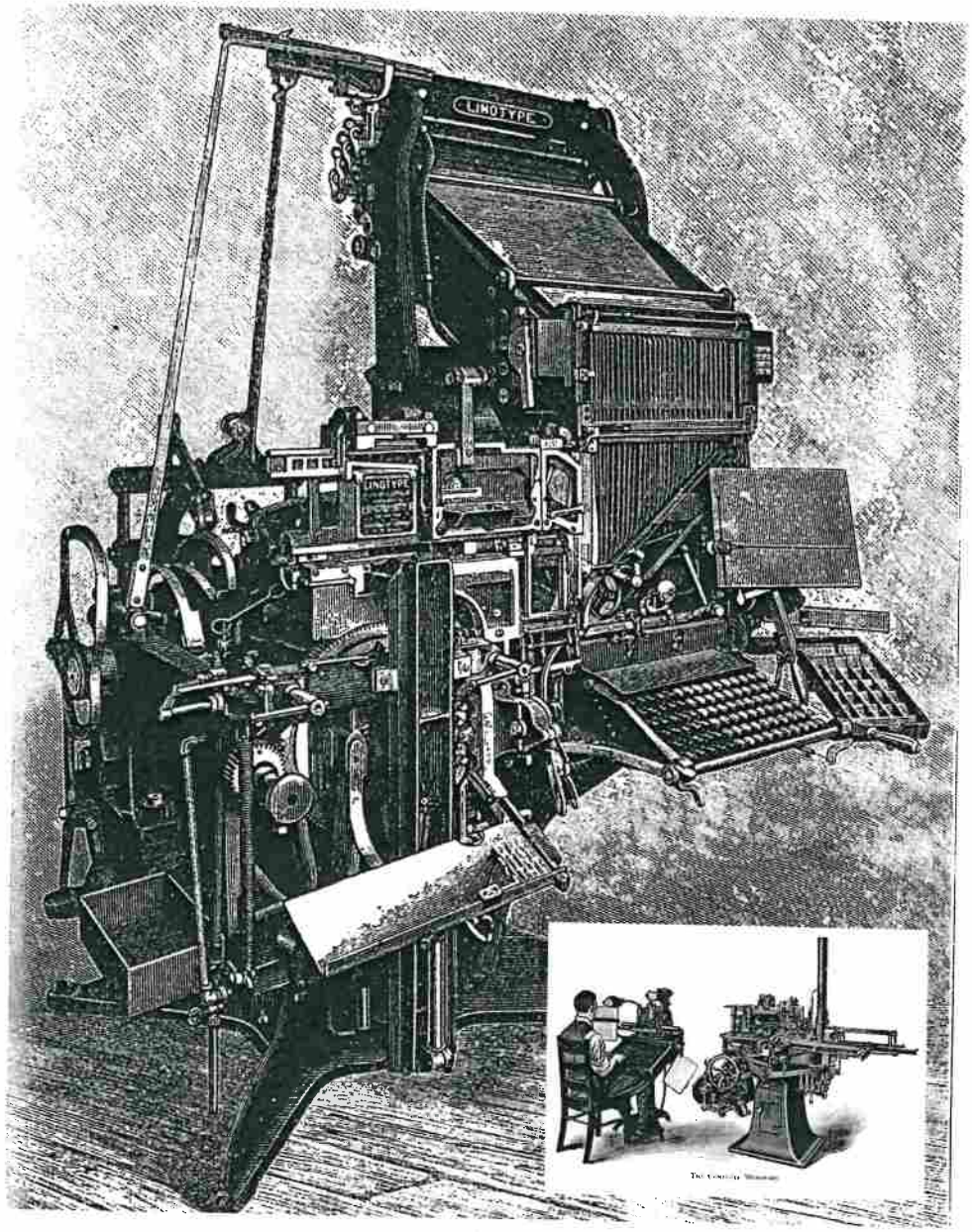
Stereotyping was a process for making copies of the made-up pages of text and illustrations, known as a "foundry forme," which would be coated with papier-mâché. When dry, it could be used as a flexible mold to make a stereotype of the original forme. This would be used for long print runs when type was likely to wear out; for multiple copies; or for making curved plates for rotary printing presses.

Since the invention of photography there had been numerous attempts to reproduce photographs for printing and in 1888 Frederick Ives of Chicago made this possible with the introduction of the squared screen.

There were innovations in printing presses as well. The first successful machine press was Frederick König's steam-driven stop-cylinder press, constructed in 1812. The pages of type fitted the machine bed, while the paper was wrapped around the cylinder as it passed over the inked type. It was capable of printing 800 copies per hour. König went on to make improvements to his invention. In New York in 1845, Richard Hoe patented a rotary sheet press, on which pages of type were fitted round the cylinder. Three years later, Applegath & Cowper invented the vertical rotary sheet press. Stereotyping was used to make plates that fitted round the cylinders. By 1865, William Bullock had developed the rotary printing press, which used stereotyped plates and printed on a continuous reel, or web, of paper.

Opposite: The Linotype machine solved the need for faster typesetting at the end of the 19th century. The first model appeared in 1890 and combined a keyboard to assemble the matrices and the casting process in one unit. The type was cast as a solid line of letters, called a slug.

Opposite inset: The caster was the second unit that made up the Monotype typesetting system. The two-unit system consisted of a keyboard copy-entry system and a stand-alone caster.



CONSIDERABLE EFFORT and ingenuity were devoted to the problems of casting and setting type and it was the innovative procedures and devices of Linn Boyd Benton (1844–1932) that contributed most to the improvement of making type. But in the USA and Britain there was still no standard for type measurement.

Adoption of the point system

5

Prior to the development of photosetting and digitization, metal type was processed in two different ways; one created foundry type and the other hot-metal type. Type metal is an alloy, primarily composed of lead with different additions of tin, antimony, and, occasionally, copper. Type alloys had been in existence from the 15th century, and were developed because lead alone was too soft: tin helps the lead melt, while antimony is used to increase hardness and acts to stop the alloy shrinking as it cooled.

Left: The machine punchcutter was a pantographic instrument, invented by Linn Boyd Benton. It became a contributory asset to the manufacturers of Linotype and Monotype typesetting machines.

Foundry types were the traditional form of metal type that were cast as individual letters for distribution to the typecase for handsetting. The inventions of the 19th century, the single-unit machine Linotype, and the two-unit machine Monotype, were both hot-metal systems. The initial keyboard work selected matrices in order for the type to be cast. After printing, hot-metal type would mostly be returned to the metal pot and melted down to be cast again. Foundry type used a harder alloy, and would be redistributed back to the typecase after printing or stereotyping, ready to be used again—hence the term "printing from moveable type." Today, metal type foundries are very few and far between. If type for handsetting is required, it is most likely to be cast by a Monotype Caster and then distributed to the typecase. Monotype Casters are quite difficult to find, since they are not generally used commercially today.

Linn Boyd Benton became one of the most technically inventive American typefounders. In 1866, he took a job as bookkeeper at the Northwestern Typefoundry, Milwaukee, and soon rose up the ranks. Seven years later, with a partner, he eventually bought the typefoundry.

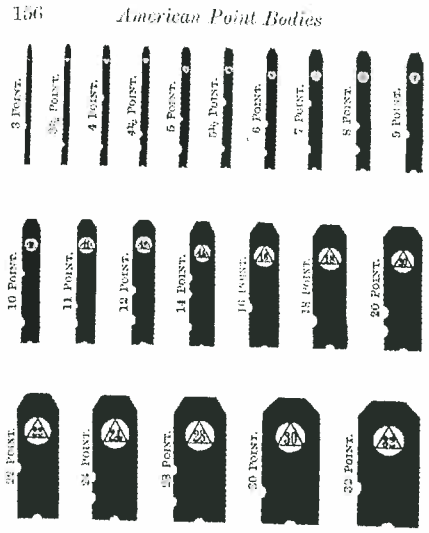
Benton's first invention in 1882 was a multiple mold for casting typespacing material. He also explored the possibilities of a typesetting machine that had automatic justification. By 1884, his typefoundry was using his most important invention, a pantograph machine for cutting steel punches, which was patented in 1885.

STANDARDIZING THE PICA

France had established a standard measurement for type bodies and related spacing material in 1775, which had spread to other European countries. In America and Britain, however, no agreement about standardization in the industry had been reached, even by the late 19th century. Without pressure from some authority agreement was difficult to achieve, since this would involve many foundries disposing of their existing types and equipment, plunging them into the expensive process of retooling.

A step toward standardization began in America when one of the largest typefoundries, Marder, Luce, & Company, fell victim in 1871 to the Great Chicago Fire, which destroyed their buildings and equipment, molds and type stocks. The company was forced to rebuild and retool, and in the process the directors decided to align their type sizes with those used by MacKellar, Smiths, & Jordan in Philadelphia, the biggest of America's typefoundries.

Nelson Hawks was a junior partner in the unfortunate company, responsible for the office in San Francisco. As a supplier of printers' equipment and materials he was confronted daily with the problems that non-standardization created. He devised a system of type body standardization and was keen to encourage other foundries to participate in it. Eventually his dedication paid off, in spite of resistance from some of his directors, and he was able to convince other foundries of the value of his system. His campaign reached full acceptance in 1886, and was taken up in Britain in 1898. However the MacKellar, Smiths, & Jordan point, which became the universal standard in America, Britain, and other English-speaking countries, is not exactly 72 points to an inch. One point is 1/72.27 of an inch or 0.351mm, which continues to be the standard for metal type. However, Adobe adjusted the point to exactly 1/72 of an inch (0.353 mm) when creating the computer page description program PostScript in the 1980s, and this is now the standard measurement for digital fonts.



Above: After the Chicago fire of 1871 and years of promotion, Nelson Hawks' standardization of type sizes in the United States was eventually accepted by Britain as well as other English-speaking countries.

THE TERM "OLD-STYLE" should not be confused with "Old-face;" Old-style is a 19th-century type form. The term "style" is significant and should be understood in the sense of "in the style of," meaning not the genuine thing, but emulating or similar to it.

Cheltenham and the Old-style

5

In about 1840, Charles Whittingham, of the Chiswick Press near London, took to using Caslon cast from the original matrices. He printed *Lady Willoughby's Diary* for Longmans book publishers in 1844. While this gained some attention, the revived use of Caslon was considered by some commercial printers and publishers as a retrograde venture. Caslon was not viewed with the same favor as the Modern face. However, Whittingham and a bookseller, William Pickering, went on to use the face for several books, which encouraged others to try it. A decade or so later, Caslon Old-face, which had been forgotten by the Caslon typefoundry, appeared again in the specimen book.

In 1860, the first named "Old-style" type was issued by the typefoundry, Miller & Richard. The publicity assured the reader that the new type design had "removed the distasteful qualities of the Old face while retaining the fundamental characteristics of a pre-Modern face."

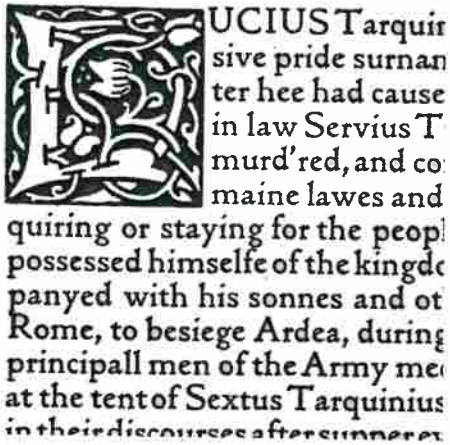
Alexander C. Phemister, an employee of the Edinburgh typefoundry, was responsible for the cutting of the Old-style series. He had attempted to adapt the Old-face form to the current aesthetic of the Modern face. The serifs were bracketed and gradual stress was reintroduced, modified to become more vertical, following the modern preference. His typecutting skills gave a uniform keenness to the forms, eliminating the irregularities of the 18th-century typeface. Shortly after he completed the series in Edinburgh, Phemister settled in America. Working in Boston for the Dickinson typefoundry he cut, among other faces, Franklin Old Style, a similar version to his earlier Old style.

The lighter, more open forms of the Old style gained in popularity over the next few years—aided by some dissatisfaction with the ubiquitous Modern face, and as a result of the more spectacular activities of William Morris and his experiments with the Venetian Old-face of Jenson. There were many copies developed into the early 20th century. There was a tendency for the later Old-styles to emphasize the archaic. They now seem rather mannered. When the machine typesetting companies began their revival of many excellent versions of Old-faces and transitionals, it was with a new respect for the punchcutters of the earlier generations.

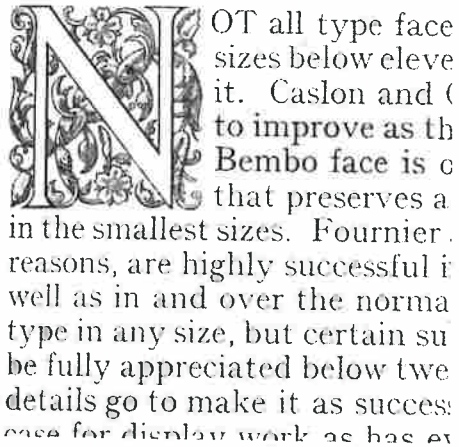
Bertram Goodhue was an architect by training, with an interest in typography. In 1894, he designed a typeface for the Merrymount Press of D. B. Updike, based (like Morris' designs) on Jenson's type of 1475. Goodhue had also been involved with the production of a "Chapbook" journal printed by the Cheltenham Press in New York. He was commissioned to design a typeface for the Press's own use. Goodhue set to work with the intention to produce a highly legible design influenced by Old-style characteristics.

Cheltenham Old Style became possibly the most popular American typeface of its time, more for its qualities as a display face than as a text face, and, to a large degree, because of the range of variants available.

Cheltenham has a light, condensed appearance, proportionally short, stubby serifs and an interesting mixture of 20th-century geometric precision and mannered organic forms. This is most noticeable in the vertical stems of the capitals, which contrast with the curved letters of the lowercase "a," "g," "f," "r," and "s." The capital "A" has an overhang at the apex, while the capital "G" has a spur on the lower curve of the bowl which is not quite a serif. It is suitable for publicity texts that need character, since it has a very strong personality on the page.



Above: An example of William Morris' Golden Type in use. Morris chose Nicolas Jenson's Venetian types used in 1476 as a model for his own creation Golden Type.



Above: This 12-point specimen page of 19th-century Old-style is an example of the type that influenced the forms of Bertram Goodhue's later creation, Cheltenham.

AaGg

Above: Bertram Goodhue's Cheltenham Old Style became popular immediately and sparked off a number of similar designs.

Below: Goodhue's design has a distinct character and is rather condensed, with stubby serifs and a small x-height. In this italic cut the lowercase "e" and "p" have open counters, and the "s" has the characteristic terminating teardrop forms rather than serifs.

foremost position

THE AMERICAN PRINTER and printing historian Theodore L. De Vinne was concerned with the state of commercial printing. He had strongly held views on the general standards in commercial printing and what he considered to be the deterioration of the modern letterform but unlike Morris, De Vinne was an experienced and knowledgeable printer with a full understanding of the commercial and practical problems of type design.

De Vinne and New Century

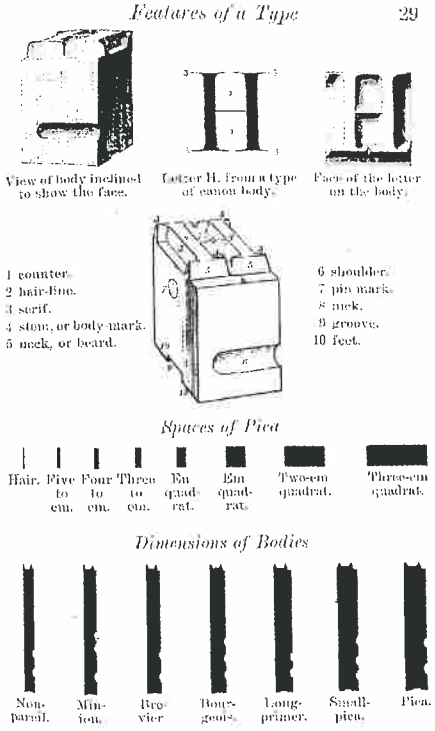
5

By the close of the 19th century, enormous progress had been made in the development of the printing industry. The demand for books, magazines, newspapers, and other printed matter had hastened technical innovation.

For most of the 19th century, before mechanical typesetting became commonplace, most newspapers and books were printed using a variety of mediocre Modern roman faces. By the early 1800s, British typefounders were producing Modern romans that lacked the full classic elegance of a Bodoni Modern. In their pure simplicity, Bodoni's hairline serifs were not robust enough for the rough handling of the commercial print shop and the power-driven presses; they could only be at their best when given the attention that is possible with the hand press and the smooth surface possible with wove paper, for which they were designed.

There were three British Modern faces that survived the 19th century but were always in the shadow of the internationally respected Bodoni. William Martin, brother Baskerville's apprentice Robert, cut a type for printer William Bulmer in 1790, revived by Morris F. Benton in 1928 as Bulmer. Richard Austin worked for John Bell's British Letter Foundry and cut a transitional type bordering on the Modern that was revived as Monotype Bell in 1932. Later, in 1810, William Miller of Edinburgh commissioned him to cut a Modern, revived in 1909 as Scotch Roman by the American Type Foundry. All three of these owed something to Baskerville, although the vertical contrasting stress of thick and thin strokes expresses the influence of the Modern face. The stress is tapered on curves and serifs carry a suggestion of a bracket, creating a more amiable character that is less austere than Bodoni.

Left: De Vinne's type design was not so much a new design as a technical improvement to a Modern face that had not kept up with technological developments. The enlarged image of Century Schoolbook (top) shows that it has something of Clarendon (below) in its character, helping to maintain it as a hard-working, versatile typeface to this day.



Above: Theodore L. De Vinne (1828–1914) was a frequent writer on the history and practice of printing. He was of the opinion that the delicate Modern types made popular by Bodoni were unsuitable for the faster printing production methods of mass-market publications.

De Vinne's criticism of these Modern romans was of their poor legibility and presswork. He believed that the uniform vertical stress made identity of individual letters difficult. His proposal for improvement was to increase the thickness of thin strokes and give the serifs more body, not only to improve legibility but also to create a type that was better able to deal with the stresses of the modern machine presses. De Vinne insisted on keeping the narrow set that was important for maintaining a high number of words per column.

Linn Boyd Benton, as technical director of the American Type Foundry (ATF), was commissioned by De Vinne to cut a type for De Vinne's *Century* magazine. Benton's final design turned out to be a great success, which caused the introduction of a series of variants designed by Boyd's assistant, his son Morris Fuller Benton. Over nearly 30 years Morris Benton developed 18 variants of Century, some of which are now digitized. The most popular digital version of Century is Century Schoolbook, which was released in 1924; other versions are Century Expanded, cut in 1903, and Century Old Style, cut in of 1909.

Below: Century Schoolbook is the most popular of the existing Century family, and is admired for its excellent readability.

abcdefghij
klmnopqr
stuvwxyz
ABCDEFG
HIJKLMN
OPQRSTU
VWXYZ

THE SEARCH FOR typographic originality in the early 19th century led to the introduction of the sans-serif. At the very beginning of the 20th century, the American sans-serif Franklin Gothic was designed. It became one of the most popular Gothics in history, and it retains international celebrity to this day.

Fuller Benton & Franklin Gothic

6

Morris Fuller Benton began his studies at Cornell University in 1892, the same year that his father's firm, Benton, Waldo, & Company, joined up with 22 other foundries to form the American Type Foundry (ATF). Benton joined ATF as his father's assistant a few months after he graduated. Linn Boyd Benton's energy and inventive genius had made him an important asset to the new organization. Father and son and their families soon moved to New York, closer to head office. By 1900, Benton had become head of ATF's type design department. One of his first projects was the design of a new sans-serif, Franklin Gothic.

Although ATF already had a large number of Gothics in their specimen book as a result of the amalgamation, Benton proceeded to cut the first of the series of Franklin Gothic faces, completed in 1902 and released in 1905. A condensed version was released the same year, the following year saw an extra condensed, oblique fonts came in 1913, and in 1914 a condensed shaded was released. Benton gained a reputation for careful thought and for the research he carried out before commencing a new type design, so it may have been the appearance of revived sans-serifs by the German foundries of Berthold and Bauer

Left: These advertisements in a 1902 motoring magazine are set with typical sans-serifs. Morris Fuller Benton was renowned for his carefully researched approach to type design, and he referred to similar sans-serif fonts found at the American Type Foundry, in redesigning the coherent Franklin Gothic family of weights and styles.

ABCDEFGHIJKLMNOPQRSTUV
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUV

Below: The Franklin Gothic lowercase "g" with its full-looped descender formed into a bowl is typical of the 19th century. The Univers "g" is provided for comparison.

Above: Franklin Gothic has an extensive range of weights and italics, which include a collection of condensed designs.

Right: This Stephenson, Blake, & Company foundry type shows the original forms that are characteristic of the 19th-century sans-serif Grotesque No.9.

that convinced him of the need for a revitalized Gothic. It was the pantographic punchcutting device—which was invented by his father in 1885—that made creating family variants a comparatively simple development.

For the new typeface, the letters were first drawn at about 40mm (1.5") high. Then each letter was produced as a enlarged outline drawing that could be studied for inconsistencies and corrected as necessary. It was also possible at this stage for the pantograph device to be adjusted to draw condensed, expanded, or oblique forms. The improved outline drawing was filled in to make a solid letterform, which was then tested for clarity of form at various sizes, by optical reduction, and again corrected if necessary. A pattern plate was made from the final drawing. This was done by a wax-coated brass plate being fitted to the pantograph machine, and an outline of the drawing being traced at a smaller size into the wax. A layer of copper was electrically deposited onto the plate in order to create a raised image of the letter. This became the pattern plate, which was used as a template by the punchcutting machine. In the 1960s, ATF developed this punchcutting principal into a machine that engraved directly into matrix blanks, providing a more practical means of making matrices. The machine could be adjusted to engrave matrices of specific point sizes.

Morris F. Benton's Franklin Gothic retained, but refined, features of 19th-century types, such as a slight overall narrowness. There is a modest reduction of line thickness at the junction of stems and bowls, and at the head and foot of circular letters. There is also the retained two-bowl, lowercase "g," which many 20th-century sans-serifs have done away with. Benton's Franklin Gothic has retained its popularity since it has a friendliness matched only by Gill Sans.

AFTER the First World War Germany was unstable and in the face of a collapsing government, many people sought reassurance in strong, dynamic visions of the future. Against this backdrop, it is not surprising that there was considerable enthusiasm for, and hope in, the art movement known as Modernism.

Paul Renner & Futura

6

There was no new typeface that could express and serve this 20th-century effort to break with the past until well into the 1920s. Futura, issued in 1927 by the Bauer typefoundry, became the favorite and best known of the first geometric sans-serif typefaces that symbolize the aesthetics of early Modernism. Its very name evokes a kind of positive expectation.

Futura was the creation of Paul Renner, a teacher, graphic designer, type designer, and author. Renner was born in the German town of Wernigerode in 1878. He became director of Munich's Graphic Arts College in 1926 and from 1927 was director of the Munich Master Printers' College. During this time he was working on his alphabet design. Renner was an active member of the Deutsche Werkbund. In 1922 he wrote Typography as Art, and in 1932 he wrote Cultural Bolshevism, which later led him into trouble with the National Socialist Party and eventually led to his dismissal from his directorship. In 1933, before his arrest, he was in charge of the design of the German section of the Milan Triennale, and was awarded the Grand Prix.

The modernist aesthetic attached importance to form that derived from function, and ornament and decoration were to be stripped away. Renner took the opportunity in his early studies to explore aspects of letterform that were very different from the conventions for roman forms. At the last moment, when the finished designs were considered for production by the Bauer typefoundry, a number of modifications were recommended to the lower case because the new forms were considered too radical for general commercial use; these were replaced by more conventional forms.

During the early decades of the 20th century the sans-serif emerged as the letterform that best represented the theoretical requirements of avant-garde graphic designers and typographers of the "New Typography."

The sans-serif typeface was a 19th-century invention that emerged from the needs of the industrial age. Its identity was strictly attached to commercial applications, with no connotations of bookishness. In fact, most sans-serifs were display faces, so that when Jan Tschichold was designing his book *Die Neue Typographie* he had difficulty in finding a text-size sans-serif to use.

The design of a new 20th-century sans-serif was an undertaking that occupied many type designers at this time. Jacob Erbar had claimed the sans-serif as representative of the new age before the war. By 1924, he had produced a sans-serif design named Erbar for the Ludwig & Mayer typefoundry. Rudolf Koch, a highly respected German calligrapher, type designer, and teacher, contributed Kabel, a geometric

Below: The bowls of Futura are not quite circular. Although there is an apparent single-line thickness for stems and bowls, subtle optical corrections at the point of contract between stem and bowl have been made.

Above: The comparison between the geometric Futura, top, and and humanistic Gill, below, can be appreciated.

sans-serif released by the Klingspor typefoundry in 1927. In England some ten years earlier, Edward Johnston, an expert calligrapher and teacher at the Central School of Arts and Crafts in London, had created a geometric sans-serif intended for use by London Transport.

Futura

the quick brown fox jumps over the lazy dog

Helvetica

the quick brown fox jumps over the lazy dog

Univers

the quick brown fox jumps over the lazy dog

Gill Sans

the quick brown fox jumps over the lazy dog

Above: Renner's poster design for the college uses the letterforms that he had developed for his successful geometric sans-serif, Futura.

Left: A comparison of four 20th-century sans-serifs makes it easier to appreciate their individual characters.

ALTHOUGH THE EARLY part of the 20th century was notable for the arrival of new sans serif faces in 1930 there was an exception, Times New Roman, a typeface created for the *Times* newspaper, that became associated with authority and the British Empire.

Stanley Morison & Times

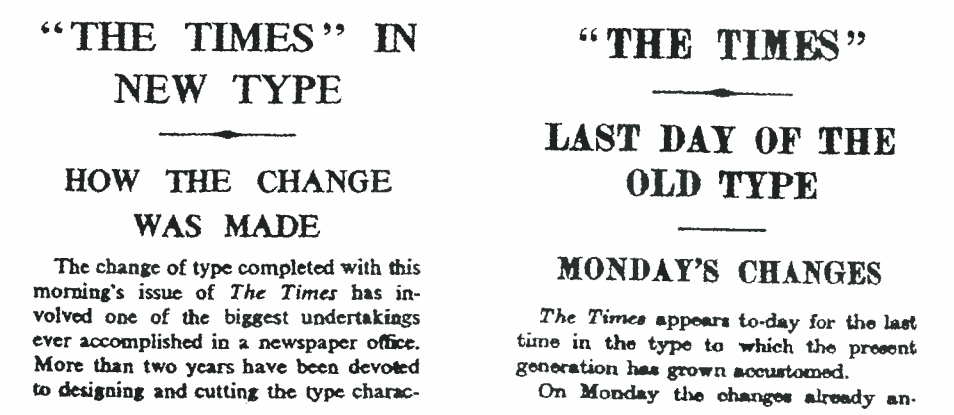
6

While the actual creator of the design is to this day a source of controversy, it is undisputed that Morison was responsible for the introduction of this type, and it fitted the purpose beautifully.

In the 1930s, Stanley Morison was at the height of his power and influence as an authority on letterforms and type history. He was an established commentator on the art of printing and wrote extensively on the history of early printing. He has been described as possibly the most distinguished British scholar and typographer of the 20th century.

Morison started his working life as a clerk. In 1913, his first printing job was at the office of *Imprint*, a journal that campaigned for an awareness of good printing and design. In 1923 he co-founded *The Fleuron*, a journal of typography which won international acclaim with its articles on typographic history and theory. He also took on the post of typographic adviser to Cambridge University Press and the Monotype Corporation.

Below: Morison's redesign not only consisted of producing a text typeface. He wrote a detailed analysis of what were the existing faults and an explanation of what was needed. This consisted of several versions of the new type to fulfil particular functions, such the small advertisements that still appeared on the front page.



"THE TIMES" IN NEW TYPE

HOW THE CHANGE WAS MADE

The change of type completed with this morning's issue of *The Times* has involved one of the biggest undertakings ever accomplished in a newspaper office. More than two years have been devoted to designing and cutting the type charac-

"THE TIMES"

LAST DAY OF THE OLD TYPE

MONDAY'S CHANGES

The Times appears to-day for the last time in the type to which the present generation has grown accustomed.

On Monday the changes already an-

In 1929, Morison contributed to a special *Times* newspaper supplement on printing. His article, "Newspaper Types: A Study of The Times," was highly critical of the quality of the newspaper's printing and old-fashioned typography. He produced a lengthy report, which put his case for the improvements to the paper's typefaces; making proposals in the light of type history and the qualities of various type designs, and introducing ideas from the latest research on legibility.

Morison believed that the newspaper had to improve its printing quality so that it reached the standard normal for books. Due to his interest in historic typefaces and his role of supervising the revival and commissioning of typefaces for the Monotype Corporation, Morison had in mind a modified version of the typeface Plantin, improved with sharper serifs to give the type better definition for stereotyping casting. Since he himself was no draftsman, to realize his ideas Morison made use of the drawing skills of Victor Lardent, a lettering artist employed in the advertising department of *The Times*.

The task wasn't straightforward. After many drawings and test castings, the revised style of *The Times* was launched on 3 October 1932. The previous typeface used by the newspaper had been known as Times Old Roman, so its replacement was named Times New Roman.

Times New Roman

the quick brown fox jumps over the lazy dog

Garamond

the quick brown fox jumps over the lazy dog

Baskerville

the quick brown fox jumps over the lazy dog

Bodoni

the quick brown fox jumps over the lazy dog

Left: As a serif typeface Times New Roman has a crisp, clean neutrality that has recommended it to the general printing industry. It has a large x-height and is rather narrow, which makes it very economic on space; this is an important quality for a newspaper type. Its sturdy letterforms were designed to withstand the rigors of letterpress newspaper presses.

Above: The economic design of Times New Roman, shown in black are compared with the same letters of John Baskerville's roman, shown gray.

LETTER CARVER, wood engraver, and sculptor Eric Gill was born in Brighton, England in 1882. He was apprenticed to the architect of the Ecclesiastical Commission of London. Here he developed an interest in carving lettering and attended evening classes run by the brilliant calligrapher, Edward Johnston.

Eric Gill & his Sans-Serif

6

On leaving the architect's office in 1903, Gill set up on his own as a craftsman in a workshop in Hammersmith, West London. There he took on commissions of lettering and wood engraving for (among others) W. H. Smith and the publishers Insel, based in Leipzig, Germany.

Gill moved to the Sussex village of Ditchling in 1906. Here he was able to extend his skills to include carving sculpture. The artistic community of Ditchling developed with the arrival of Edward Johnston and Douglas Pegler, who brought a small handpress workshop which became known as the St Dominic Press.

Seven years older, Stanley Morison was 33 when he became the typographical advisor to the Monotype Corporation in 1923. Morison was not a supporter of the Modern design movement, favoring rather the classical book design of the pre-19th-century master printers. Morison held the responsibility for providing a program of re-cutting historic typefaces, and to commission new contemporary typefaces to extend the range of Monotype composition faces. Late in 1925, Morison invited Gill to help him in this. Gill was a good choice, because although he had no previous experience of the technical requirements that were involved, he had been an enthusiastic creator of letterforms since childhood.

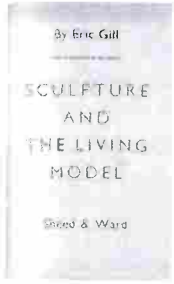
The first typeface that Gill designed for Morison, without either of them having much

abcdefghijklmnopqrstuv
wxyz & ABCDEFGHIJKL
MNOPQRSTUVWXYZ
1234567890

Above: Eric Gill's best-known humanist sans-serif is Gill Sans. The first types appeared in 1928.

AaGg
AaGg

Compared with Futura, Gill Sans shown black, is less mechanical; its forms reminiscent of classical roman proportions.



Left: Gill with his son-in- law and partner René Hague, designed and printed this book in 1929.

Right: A page from a 1930 edition of The Fleuron Society's journal set in inscriptional style, using 14-point Gill Titling.

idea of how to proceed, was called Perpetua. The letterforms are uniquely Gill's, reflecting his experience of lettercutting in stone. Perpetua is a classically proportioned roman with smoothly bracketed, sharply tapering serifs.

It was during this time that the idea for Gill's famous sans-serif emerged. While working on Perpetua, in 1926, Gill was asked to paint a shop sign for a Bristol bookseller, Douglas Cleverdon. It was this lettering that led Morison to suggest that Gill create a sans-serif to compete with the continental geometric sans-serifs that were beginning to become popular. The letterform Gill had created for the shop was only a capital alphabet and he embarked on the design aware of the greater difficulties of constructing an even monoline lowercase alphabet, which involved many curves and junctions.

Gill's resulting sans-serifs were firmly modelled on classic roman proportions. Gill was able to introduce refinements, which, with the help of the Monotype drawing office, have established Gill Sans as a much-loved classic among sans-serifs. The first of the series to be published in 1928 was a titling available in five sizes (14-point, 18-point, 24-point, 30-point, and 36-point); a lowercase version did not appear until 1933. Since then there have been additional variants, many of them not from Gill's hand.

In contrast to the geometric sans-serifs of the same decade, Gill Sans has a friendly warmth and is classified as a humanist sans-serif. The series was originally produced as hot-metal letterpress type, so when it was digitized it is most likely that the original Monotype office drawings were used.

HELVETICA HAS FOUND enduring popularity from the 1960s onward. Arial, distributed by Microsoft, is an unauthorized, Helvetica clone, and can be distinguished from Helvetica by examining the uppercase "R." It's also a default typeface for the Mac OS.

Miedinger & Helvetica

6

Although the Swiss Modernists of the 1940s were supporters of sans-serif as a basic typeface for modern graphic design, they did not make use of Renner's Futura, the sans-serif of the 1920s. They did not care for the cool geometry of its letterforms and preferred the late-19th-century Grotesques. The sans-serif letterforms introduced originally as display type had at first been described as "Grotesques" because, while they were acknowledged to be effective graphically, they did not meet the prevailing standards of elegance. In the 1940s and 1950s, however, prevailing opinion believed the monoline forms to be clear, open, and legible, without historical or social connotations.

Many of the 19th-century Grotesques (for example, the Stephenson, Blake, & Company's Grotesque No.8 and No.9) were unsuitable for revival, being too bold, too condensed, or simply too idiosyncratic. One of the first to be brought back was Akzidenz-Grotesk, the Berthold sans-serif of 1898. This was a well-proportioned, clearly-formed sans-serif with no outstanding idiosyncrasies.

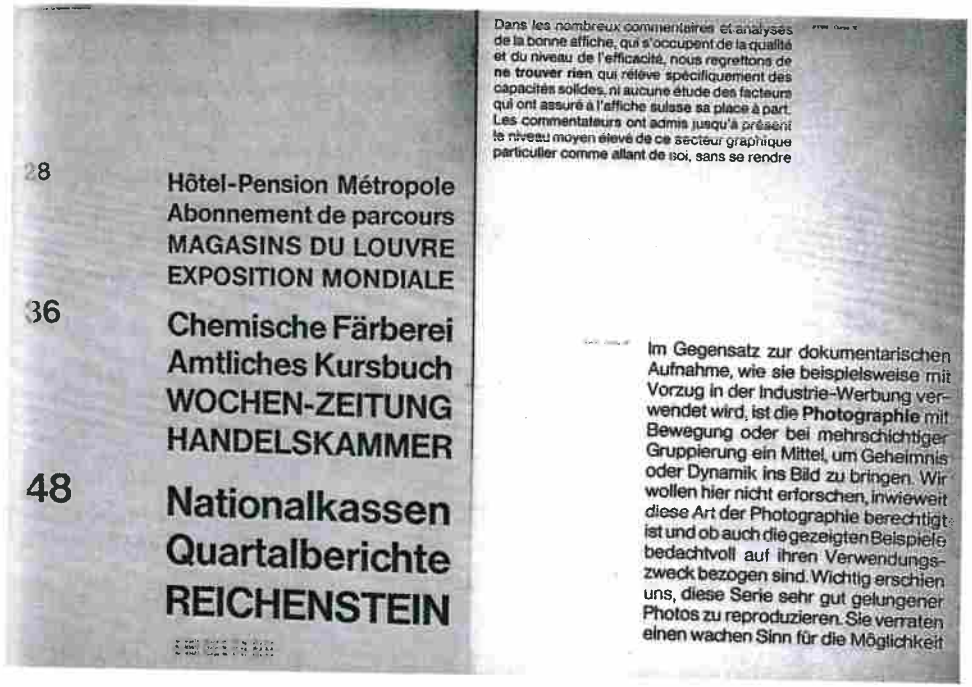
Those who objected to the total use of sans-serif considered the Grotesques to be lacking unsubtlety and legibility compared with the serifed letterform. While sans-serifs might be used in advertising display, they were totally unsuitable for lengthy texts. Serifs, critics argued, improved legibility by forming visual links between letters, enabling them to fit together better as words.

As the economic situation improved and typefoundries returned to full production in the 1950s, a process of upgrading began to take place. Along with other foundries, the Haas typefoundry in Münchenstein, Switzerland, searched for suitable typefaces for modernization. In the mid-1950s the directors Edouard and Alfred Hoffmann briefed their in-house designer Max Miedinger with their plan to produce a new sans-serif to meet the growing demand and competition for typefaces.

Miedinger's choice as a model for his design was an 1880 type, Schelter Grotesk. The sans-serif that Miedinger produced in 1956 was released as Neue Haas Grotesk. The first version consisted of three weights; medium, semibold, and bold, with no italics. It was cast in 13 sizes, from six to 48-point, as foundry type for hand-setting. At the time this was still a common method of typesetting, especially for display work. When the Haas parent company, the D Stempel AG typefoundry in Frankfurt, released Neue Haas Grotesk in West Germany in 1961, they renamed it Helvetica, the Latin word for Swiss. This made reference to Swiss International Style and was considered a more suitable name for international purposes. Helvetica was not, actually, that popular with the Swiss, possibly due to the competition from Akzidenz Grotesk, which was well-entrenched. However, in other European countries Helvetica became popular with those sympathetic to Swiss graphic design philosophy. In 1983 Helvetica was digitized by the Linotype Design Studio and updated with a comprehensive range of family variants, released as Neue Helvetica.

First cast as foundry type for hand-setting, New Haas Grotesque was available in a limited number of body sizes. Later in the 1960s as Helvetica, it became available for machine setting.

The blandness of Miedinger's New Haas Grotesque design may have held the secret of its success. It was commissioned by Edouard Hoffman, who also commissioned Herman Eidenbenz in the design of Clarendon.



ABCDEFGHIJKLMNOPQRSTUVWXYZ&
abcdefghijklmnopqrstuvwxyz.,;:!?-'()
£1234567890

HELVETICA IS CLASSIFIED as a Neo-grotesque sans-serif, as it is modeled on 19th-century Grotesques. Others included in this classification are Akzidenz Grotesk, Venus, Haas Unica, Grotesque No. 1, Berthold Standard Grotesk, and Folio.

Helvetica: the typeface

6

Helvetica has proved to be one of the most popular sans-serifs of all time. This must be due in some degree to the inclusion of the font in many computer systems. Its great success has made it subject to many imitations, which include Arial, Helious, Swiss, Helvetia, Nimbus, and Heldustry.

The refurbished 19th-century Grotesques gained favor because they presented a simple, unadorned, neutral character that expressed, better than any other designs, the requirements of the 20th-century Modernist aesthetic. Modernist typographers, like their traditionalist counterparts, considered it important that text types be as neutral as possible, so that the type exerts a minimal influence on the mood of the reader. Both Akzidenz-Grotesk and Helvetica were designed with this in mind.

Helvetica is a typeface associated originally with the Swiss International Style; now, however, like Times New Roman, it has become popular and ubiquitous. It is used in many different ways for many different purposes, proving its value as a font with clear, no-nonsense legibility, making its point without rhetoric. Helvetica's core weights make it a very legible, and it has a large x-height, fairly short ascenders and descenders, and close letter fit. The letterforms—both capitals and lowercase—are generously shaped; the "O" is almost, but not quite, a full circle. Helvetica is hard to differentiate from Akzidenz Grotesk, the differences lying in the details. Helvetica has a larger x-height; the terminals of curved letters "C," "G," "S," "a," "c," "e," and "s" are horizontal, when in Akzidenz they are closer to 45 degrees. This is more noticeable in heavier weights.

The original D Stempel AG Helvetica, the preferred range of 1961, is now digitized, and contains a range of four weights with obliques from light to black in standard set width. Helvetica Condensed has four weights with obliques from light to black, and there are two weights of Helvetica Narrow and one weight of Helvetica Compressed, Extra Compressed, and Ultra Compressed. There is one weight of Inserat Roman and there are three fonts of Helvetica Rounded (the font is made less austere by the stems being rounded off at the terminals). There are also two textbook weights and a range of numerical fractions—a total of 19 variations in the family. The 1983 digitized range of Neue Helvetica contains eight weights and obliques from ultra light to bold outline in standard set width. Neue Helvetica Condensed has 10 weights and obliques from ultra light to extra black oblique. Neue Helvetica Extended has eight weights and obliques from ultra light extended to black extended oblique—a total of 26 variations in the family. Digital innovation has meant font variants are far more simple to produce than before, and Helvetica shows how the concept of the font family maybe extended to the limits to offer a truly comprehensive palette.

hhhhhhhh
hhhhhhhh
hhhhhhhh
hhhhhhhhh
hhhhhhhh
hhhhhhhhh

Helvetica has become possibly the most used sans-serif ever. Neue Helvetica consists of a large range of weights, from Ultra Light to Black, in roman, condensed, and expanded forms.

Right: The promotional brochure for Helvetica is an exemplar of the Swiss Style. Helvetica was marketed very successfully and it quickly became fashionable on its release in 1961.

Helvetica
the quick brown fox jumps over the lazy dog

Univers
the quick brown fox jumps over the lazy dog

Futura
the quick brown fox jumps over the lazy dog

Left: It is interesting to compare three of the most prominent sans serif faces of the 20th century. Futura appears very idiosyncratic compared with the other two. Its lower case "j" has no finial and the "u" has no stem.

Ga
Ga

Compare the letterforms "G" and "a" of Helvetica (Grotesque) and Franklin (Gothic).

SANS-SERIF

6

PHOTOSETTING

IN 1954, the Deberny & Peignot typefoundry in Paris was preparing a typeface collection for the new Lumitype/Photon photosetting machine. A sans-serif was required and Futura was a strong possibility, until Charles Peignot's young design director Adrian Frutiger asked for the opportunity to submit a design of his own. Univers was the resulting typeface.

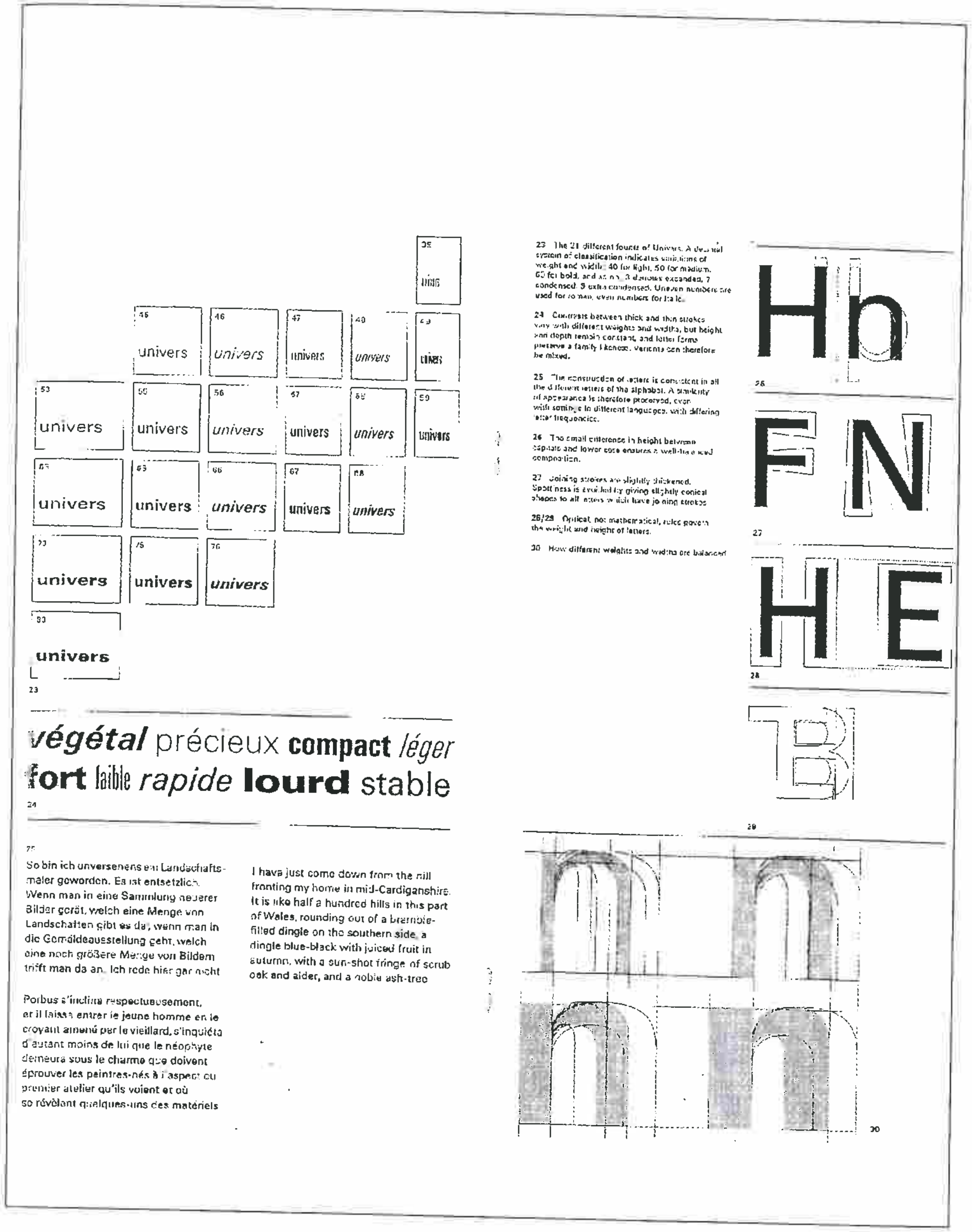
Frutiger had been given ten days to prepare his proposal and he drew 16 versions of his sans-serif using the five letters that formed the word "monde." Peignot was delighted with Frutiger's designs and names were discussed: "Le Monde" was rejected as being too French. Eventually at Peignot's insistence it was called "Univers."

Frutiger had been trained in a sans-serif environment dominated by Akzidenz Grotesk. While studying under Walter Käch he had prepared some drawings for a sans-serif, so for his proposal he returned to his student work. His new sans-serif for the Lumitype/Photon photosetting system was a fresh look at the form; the new technology influencing a move away from the 19th-century monoline. The new sans-serif introduced a variation of line thickness, so that there is a slight difference between vertical and horizontal strokes, creating a more refined form than the metal letterpress monoline Grotesques.

As a typeface designed for photosetting, the new type was intended to fulfil the role of a sans-serif for extended lengths of text as well as display. Its first release in 1957 consisted of 21 variants within a carefully rationalized system conceived from the first set of drawings. Frutiger had given much thought to the issue of type families, which in many cases were created by an ad hoc process of adding further weights to a face as it acquired acceptance.

Frutiger introduced a numbering system related to a grid to identify the family relationships. The regular weight was 55, what would normally be bold was 65, extra bold was 75, and light was 45. Regular weight italic was 56, 66 was bold italic, 76 was extra bold italic, and 46 was light italic. The grid also explained the relationships within the family: to the right were increasingly condensed variants, to the left increasingly extended variants.

Opposite: The rationalizing of the family was a milestone in type design—a development combined with the refinement of the sans-serif letterform. Although Univers met with resistance in Switzerland from Akzidenz Grotesk and Neue Haas Grotesk, it was generally hailed as an innovation.



UNIVERS'S GREAT QUALITY is its modesty. What Adrian Frutiger's design may lack as an assertive display face, it makes up for in its quietly efficient range of weights, enabling it to function as a text face as well as for display.

Frutiger & Univers

6

Despite its divergence from Helvetica and Akzidenz-Grotesk, Univers is essentially a Neo-grotesque, but with a humanist touch. The earliest version of Univers was designed for use on the Lumitype/Photon photosetting machine, which was a second-generation photosetter. However, its popularity increased when, in 1961, Monotype released it for Monophoto and hot-metal machines. The sizes for hot metal were actually continental Didot point sizes cast on larger Anglo-American point bodies, as the Didot point was larger than the Anglo-American point. This was possibly an economy, since the demise of the hot-metal Monotype system had already been signaled by the first Monophoto Filmsetter's introduction in 1957.

A comparison with Helvetica and Akzidenz shows Univers to be narrower, more noticeably in the capitals. The circular characters are more oval, with a slight squareness to the curves, suggesting a less mechanical form. However, the letterfit is more generous, so that size for size, even though the x-height is smaller, Univers will take up more space than Helvetica. The range of variants follows carefully balanced increases in weight that do not match those of Helvetica and Akzidenz.

The slight slimming of horizontal curves, more associated with serif forms, is intended to overcome the optical illusion that makes horizontal strokes appear thicker than vertical ones. In addition to the overall general character of Univers, there are some individual letters which identify it; the "C" has a wide mouth, and "G" is without a spur at the foot (this is characteristic of Frutiger's sans-serifs although more common in serif fonts). The arms of "K" join each other at a single point on the vertical stem, and "Q" has a tail that lies along the baseline. Among the lowercase characteristics, the "a" has no spur on the vertical stem, the ascender of "t" is cut diagonally, and "g" has a tail rather than a bowl—a common characteristic of this generation of sans-serifs.

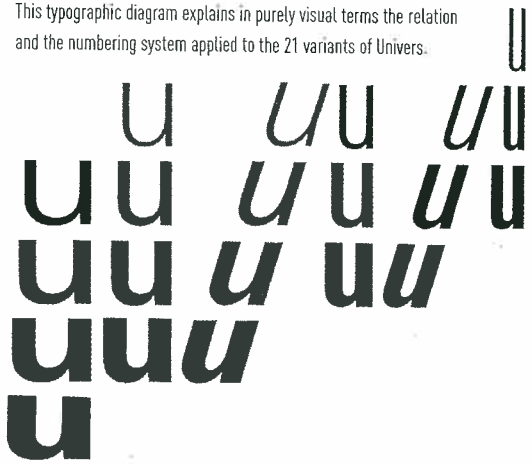
During the late 1990s, in addition to their existing range of Univers, Linotype took on the task of totally updating the 40-year-old design. This involved a return to the original drawings of the 1950s to check up on the anomalies that might have arisen during the years Univers had been in circulation. Linotype has updated the design by carrying out refinements to the letterforms and the character weight relationships, and the range of weights and widths has been increased. Italics have become obliques, and the angle of slant has also been increased. The original two-digit numbering system has been revised and a three-digit system replaces it. In the new system, the first digit denotes the weight, the second denotes the width, and the third digit denotes whether it is roman or italic.

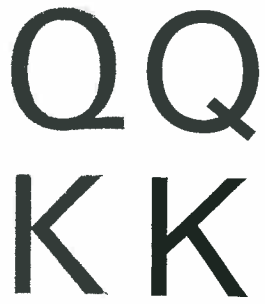
abcdefghijklmnop
qrstuvwxyz
ABCDEFGHIJKLMN
OPQRSTUVWXYZ
abcdefghijklmnop
qrstuvwxyz

Left: As a sans-serif, Univers is classified as a Neo-grotesque, implying its form is influenced, if only a little, by the 19th century Grotesques.

Below: The Univers italic (shown black) is much squarer and more condensed than Helvetica italic (gray).

This typographic diagram explains in purely visual terms the relation and the numbering system applied to the 21 variants of Univers.





Above: Both these typefaces appeared in the 1950s. The subtle variation of line thickness when set against Helvetica (shown black) reveals Univers (gray) to be more organic in detail.